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VOL. XXXVI.

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OF THE

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OF

LONDON.

VOL. XXXVI.

FOR THE YEAR 1894.

WITH A LIST OF OFFICERS, FELLOWS, ETC.

EDITED BY
WILLIAM DUNCAN, M.D., SENIOR SECRETARY,
AND
PERCY BOULTON, M.D.

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Malins, Edward, M.D.	Birmingham.
Furner, Willoughby	Brighton.
Rigden, George	Canterbury.
Lawrence, A. E. Aust, M.D.	Clifton.
Braithwaite, James, M.D.	Leeds.
Thompson, Joseph	Nottingham.
Walker, Thomas James, M.D.	Peterborough.
Walters, James Hopkins	Reading.
Wilson, Robert James	St. Leonard's.
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Burd, Edward, M.D., C.M.	Shrewsbury.
Childs, Christopher, M.D.	Weymouth.
Branfoot, Arthur Mudge, M.B.	Madras.
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Elected

1871 KIDD, GEORGE H., M.D., F.R.C.S.I., Obstetrical Surgeon to the Coombe Lying-in Hospital; 30, Merrion square south, Dublin.

1892 LISTER, Sir JOSEPH, Bart., F.R.S., LL.D., 12, Park crescent, Portland place, N.W.

1892 TURNER, Sir WILLIAM, F.R.S., Professor of Anatomy, University of Edinburgh; 6, Eton terrace, Edinburgh.

1870 WEST, CHARLES, M.D., F.R.C.P., Foreign Associate of the Academy of Medicine of Paris; 4, Evelyn mansions, Carlisle place, Victoria street, S.W. *Pres.* 1877-8.

FOREIGN SUBJECTS.

1895 GUSSEROW, Professor, Berlin.

1866 LAZAREWITCH, J., M.D., Professor Emeritus and Physician to the Maximilian Hospital; Spaskaja, 2, St. Petersburg. *Trans.* 3.

1862 LUSK, WILLIAM THOMPSON, M.D., Professor of Obstetrics, Bellevue Hospital Medical College, New York.

Elected

1864 PAJOT, CH. M.D., late Professor of Midwifery to the Faculty of Medicine, Paris.

1877 STOLTZ, Professor, M.D. Nancy.

1891 TARNIER, STÉPHANE, M.D., Professor of Obstetrics, Faculté de Médecine de Paris; 15, Rue Duphot, Paris.

1872 THOMAS, T. GAILLARD, M.D., Professor of Obstetrics in the College of Physicians and Surgeons; 296, Fifth avenue, New York.

1862 VIRCHOW, RUDOLF, M.D., Professor of Pathological Anatomy in the University of Berlin.

1895 VON WINCKEL, Professor, Munich.

CORRESPONDING FELLOWS.

1873 MARTIN, A. E., M.D., Berlin. *Trans.* 1.

1876 BUDIN, P., M.D., 129, Boulevard St. Germain, Paris. *Trans.* 1.

1876 CHADWICK, JAMES R., M.A., M.D., Physician for Diseases of Women, Boston City Hospital; Clarendon street, Boston, Massachusetts, U.S.

ORDINARY FELLOWS.

1894.

Those marked thus (*) have paid the Composition Fee in lieu of further annual subscriptions.

Those marked thus (†) reside beyond the London Postal District.

The letters O.F. are prefixed to the names of the "Original Fellows" of the Society.

Elected

1890† ACKERLEY, RICHARD, M.B., B.S.Oxon., St. Dunstan's, Sutton, Surrey.

1891 ADAMS, CHARLES EDMUND, 227, Gipsy road, West Norwood, S.E.

1884† ADAMS, THOMAS RUTHERFORD, M.D., 119, North End, West Croydon. *Council*, 1894-5.

1890 ADDINSELL, AUGUSTUS W., M.B., C.M.Edin., 30, Ashburn place, South Kensington, S.W.

1893† ALCOCK, RICHARD, M.B., Burlington crescent, Goole.

1883*†ALLAN, ROBERT JOHN, L.R.C.P.Ed., The Bungalow, Dulwich hill, Sydney, New South Wales. [Per Alexander Allan, Esq., Glen House, The Valley, Scarborough.]

1890† ALLAN, THOMAS S., L.R.C.P. & S.Ed., 13, Queen's road, Coventry.

1873† ALLEN, HENRY MARCUS, F.R.C.P.Ed., 20, Regency square, Brighton.

1887 AMBROSE, ROBERT, B.A., L.R.C.P. & S.Ed., 1, Mount place, Whitechapel road, E.

1878 ANDERSON, IZETT WILLIAM, M.D., 10, St. Leonard's road, Ealing, W. *Trans.* 1.

1875 ANDERSON, JOHN FORD, M.D., C.M., 41, Belsize park, N.W. *Council*, 1882.

1859 ANDREWS, JAMES, M.D., Everleigh, Green hill, Hampstead, N.W. *Council*, 1881.

Elected

1890† Anson, George Edward, M.A., M.D.Cantab., The Terrace, Wellington, New Zealand.

1870*†Appleton, Robert Carlisle, The Bar House, Beverley.

1884 Appleton, Thomas A., 46, Britannia road, Fulham, S.W.

1883† Archibald, John, M.D., 2, The Avenue, Beckenham.

1871 Argles, Frank, L.R.C.P.Ed., Hermon Lodge, Wanstead, Essex, E. *Council*, 1886-7.

1888† Armstrong, James, M.B. Edin., 84, Rodney street, Liverpool.

1886 Ashe, William Percy, L.R.C.P. Lond., 41, Sloane gardens, S.W.

1892† Ashworth, James Henry, M.D. St. And., Halstead, Essex.

1887 Bailey, Henry Frederick, The Hollies, Lee terrace, Lee, S.E.

1887† Baker, Oswald, L.R.C.P. & S. Ed., Surgeon-Major, Indian Army, Rangoon, India.

1880† Balls-Headley, Walter, M.D., F.R.C.P., 4, Collins street east, Melbourne, Victoria.

1869* Bantock, George Granville, M.D., Surgeon to the Samaritan Free Hospital; 12, Granville place, Portman square, W. *Council*, 1874-6. *Trans.* 2.

1893† Barber, Richard Henry, L.R.C.P. & S.Edin., 505, Williams avenue, Albina, Portland, Oregon, U.S.A.

1886*†Barbour, A. H. Freeland, M.D.Edin., 4, Charlotte square, Edinburgh.

O.F.* Barnes, Robert, M.D., F.R.C.P., Consulting Obstetric Physician to St. George's Hospital; 7, Queen Anne street, Cavendish square, W. *Vice-Pres.* 1859-60. *Council*, 1861-2, 1867. *Treas.* 1863-4. *Pres.* 1865-6. *Trans.* 32. *Trustee.*

1875 Barnes, R. S. Fancourt, M.D., F.R.S.Edin., Senior Physician to the British Lying-in Hospital; 7, Queen Anne street, Cavendish square, W. *Council*, 1879-81. *Board Exam. Midwives*, 1880-2. *Trans.* 2.

Elected

1894 Barnes, Thomas H., M.D. St. And., 69, Seymour street, W.

1884 Barraclough, Robert W. S., M.D.

1886† Barrington, Fourness, M.B.Edin., F.R.C.S.Eng. (c/o The Commercial Bank of Sydney, 18, Birchin lane, E.C.).

1894† Bartlett, Hedley C., L.R.C.P.Lond., High street, Saffron Walden.

1891 Barton, Edwin Alfred, L.R.C.P.Lond., 35, Cheniston Gardens, Kensington, W.

1892† Barton, Francis Alexander, B.A.Cantab., L.R.C.P.Lond., Gonville House, Penge road, Beckenham.

1887 Barton, Henry Thomas, 61, Harford street, E.

1887† Barton, William Edwin, L.R.C.P. Lond., Staunton-on-Wye, near Hereford.

1861*† Bartrum, John S., F.R.C.S., Surgeon to the Bath General Hospital; 13, Gay street, Bath. *Council*, 1877-9.

1893† Batchelor, Ferdinand Campion, M.D. Durh., Dunedin, New Zealand.

1873 Bate, George Paddock, M.D., 412, Bethnal Green road, N.E.; and 2, Northumberland Houses, King Edward road, Hackney. *Council*, 1882-4.

1871† Beach, Fletcher, M.B., F.R.C.P., Winchester House, Kingston hill, Surrey; and 64, Welbeck street, W. *Council*, 1893-5.

1871 Beadles, Arthur, Park House, Dartmouth Park, Forest hill, S.E.

1893 Beale, Arthur A., M.B., C.M.Glas., 181, Southampton street, Camberwell, S.E.

1892 Beauchamp, Sydney, M.B., B.C.Cantab., 146, Cromwell road, S.W.

1866*† Belcher, Henry, M.D., 28, Cromwell road, West Brighton.

1871*† Bell, Robert, M.D. Glasg., 29, Lynedoch street, Glasgow.

1880† Benington, Robert Crewdson, M.D. Durh., 59, Osborne road, Newcastle-on-Tyne.

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1893† Benjafield, William Barnett, M.B., C.M.Edin., Bletchenden, Lower Edmonton.

1889† Benson, Matthew, M.D.Brux., 35, Dicconson street, Wigan.

1894 Berkeley, George A. H. C., B.A., M.B., B.C.Cantab., 72, Belgrave road, S.W.

1893 Bernau, Henry Ferdinand, L.R.C.P.Lond.

1893† Berridge, William Alfred, Oakfield, Redhill.

1883 Bertolacci, J. Hewetson, Beaufort House, Knaphill, Surrey.

1889† Best, William James, 1, Cambridge terrace, Dover.

1893*† Betenson, William Betenson, L.R.C.P.Lond., Bungay, Suffolk.

1894 Betenson, Woodley Daniel, L.R.C.P.Lond., 26, Caversham road, N.W.

1893† Betts, Frederick Bernard, L.R.C.P.Lond., Autofagasta, Chili, South America.

1891† Beville, Frederick Wells, L.R.C.P.Lond., The Firs, Palace road, East Molesey.

1887*† Biden, Charles Walter, L.R.C.P.Lond., Laxfield, Framlingham.

1879 Biggs, J. M., Hillside, Child's hill, N.W.

1892 Bird, Matthew Mitchell, M.D., B.S.Durh., St. Mary's Hospital, W.

1889† Bisshopp, Francis Robert Bryant, M.A., M.B., B.C. Cantab., Belvedere, Mount Pleasant, Tunbridge Wells.

1890 Black, George, M.B., B.S.Lond., 50, Cazenove road, Stamford hill, N.

1868* Black, James Watt, M.A., M.D., F.R.C.P., Obstetric Physician to the Charing Cross Hospital; 15, Clarges street, Piccadilly, W. *Council*, 1872-4. *Vice-Pres.* 1885-6. *Chairman, Board Exam. Midwives*, 1887-90. *Pres.* 1891-2.

Elected

1893 Blacker, George Francis, M.D., B.S.Lond., F.R.C.S., Assistant Obstetric Physician to University College Hospital; 20, Weymouth street, W.

1861*†Blake, Thomas William, Hurstbourne, Bournemouth, Hants.

1872*†Bland, George, Consulting Surgeon to the Macclesfield Infirmary; Pottergate Lodge, Lincoln.

1887 Bluett, George Mallack, L.R.C.P.Lond., 11, Addison terrace, Notting hill, W.

1894 Bodilly, Reginald Thomas H., L.R.C.P.Lond., Woodbury, High road, South Woodford.

1892 Bond, William Arthur, M.A., M.D., B.S.Cantab., 9, Duke street, St. James's, S.W.

1883 Bonney, William Augustus, M.D., 100, Elm park gardens, Chelsea, S.W.

1894† Borcherds, Walter Meent, M.R.C.S., L.R.C.P., Worcester, Cape Colony.

1893† Boswell, Henry St. George, M.B. Edin., High street, Saffron Walden.

1866* Boulton, Percy, M.D., Physician to the Samaritan Free Hospital; 6, Seymour street, Portman square, W. *Council*, 1878-80, 1885. *Hon. Lib.* 1886. *Hon. Sec.* 1886-9. *Vice-Pres.* 1890-2. *Board Exam. Midwives*, 1890-1. *Editor*, 1894-5. *Trans.* 4.

1886† Boustead, Robinson, M.D., B.C. Cantab., Surgeon-Major, Indian Army; c/o Messrs. H. S. King and Co., 45, Pall Mall, S.W.

1877 Bowkett, Thomas Edward, 145, East India road, Poplar, E. *Council*, 1890.

1884* Boxall, Robert, M.D.Cantab., Assistant Obstetric Physician to, and Lecturer on Practical Midwifery at, the Middlesex Hospital; 29, Weymouth street, Portland place, W. *Council*, 1888-90, 1894-5. *Board Exam. Midwives*, 1891-3. *Trans.* 11.

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1884† Boys, Arthur Henry, L.R.C.P. Ed., Chequer Lawn, St. Albans.

1894 Brabant, Robert Herbert W. Hughes, L.R.C.P.Lond., 137, High road, Lee, S.E.

1886† Bradbury, Harvey K., 208, Ashby road, Burton-on-Trent.

1894† Bradford, Andrew, M.D., C.M., Toronto, Lanark, Ontario, Canada.

1877† Bradley, Michael McWilliams, M.B., Jarrow-on-Tyne.

1873† Braithwaite, James, M.D., Obstetric Physician to the Leeds General Infirmary; Lecturer on Diseases of Women and Children at the Leeds School of Medicine; 16, Clarendon road, Leeds. *Vice-Pres.* 1877-9. *Trans.* 6. *Hon. Loc. Sec.*

1880† Branfoot, Arthur Mudge, M.B., Superintendent of the Government Lying-in Hospital, Madras, and Professor of Midwifery and Diseases of Women and Children in the Madras Medical College, Pantheon road, Madras. *Hon. Loc. Sec.*

1887 Bridger, Adolphus Edward, M.D.Ed., 18, Portland place, W.

1888*†Briggs, Henry, M.B., F.R.C.S., Surgeon to the Hospital for Women, and Hon. Med. Officer to the Lying-in Hospital, Liverpool; 3, Rodney street, Liverpool.

1864 Bright, John Meaburn, M.D., Alvaston, Park hill, Forest hill, S.E. *Council*, 1873-4.

1894 Brinton, Roland Danvers, B.A., M.D.Cantab., 8, Queen's Gate terrace, S.W.

1869 Brisbane, James, M.D., 16, St. John's Wood road, N.W.

1885† Briscoe, John Frederick, Westbrooke House, Alton, Hants.

1887† Brodie, Frederick Carden, M.B., Fernhill park, Wootton bridge, Isle of Wight.

Elected

1866 Brodie, George B., M.D., Consulting Physician-Accoucheur to Queen Charlotte's Lying-in Hospital; 3, Chesterfield street, Mayfair, W. *Council*, 1873-5. *Vice-Pres.*, 1889.

1892 Brodie, William Haig, M.D., C.M.Edin., 88, Oxford terrace, Hyde park, W.

1889† Brook, William Henry B., M.D. Lond., F.R.C.S., James street, Lincoln.

1876 Brookhouse, Charles Turing, M.D., 43, Manor road, Brockley, S.E.

1889† Brown, Alfred, M.A., M.D., C.M. Aber., Claremont, Higher Broughton, Manchester.

1868 Brown, Andrew, M.D. St. And., 1, Bartholomew road, Kentish town, N.W. *Council*, 1893-4. *Trans.* 1.

1894 Brown, David, M.D.Lond., London Hospital, E.

1865* Brown, D. Dyce, M.D., 29, Seymour street, Portman square, W.

1889*† Brown, William Carnegie, M.D. Aber., Penang, China.

1876 Brunjes, Martin, 33a, Gloucester place, Portman square, W.

1883 Buksh, Raheem, The Hall, Plaistow, E.

1885*† Bunny, J. Brice, L.R.C.P. Ed., Newbury.

1877† Burd, Edward, M.D., M.C., Senior Physician to the Salop Infirmary; Newport House, Shrewsbury. *Council*, 1886-7. *Hon. Loc. Sec.*

1891 Burgess, Edward Arthur, 26, Chichele road, Cricklewood, N.W.

1894 Burt, Robert Francis, M.B., C.M.Edin., 124, Stroud Green road, N.

1888 Burton, Herbert Campbell, L.R.C.P. Lond., Lee Park Lodge, Blackheath, S.E.

1878 Butler-Smythe, Albert Charles, L.R.C.P.Ed., 76, Brook street, Grosvenor square, W. *Council*, 1889-91.

Elected

1887* Buxton, Dudley W., M.D. Lond., 82, Mortimer street, Cavendish square, W.

1886† Byers, John W., M.D., Professor of Midwifery and Diseases of Women and Children at Queen's College, and Physician for Diseases of Women to the Royal Hospital, Belfast; Lower crescent, Belfast.

1891 Calthrop, Lionel C. Everard, M.B. Durh., 11, Beaumont crescent, West Kensington, W.

1887† Cameron, James Chalmers, M.D., Professor of Midwifery and Diseases of Infancy, McGill University; 941, Dorchester street, Montreal.

1887† Cameron, Murdoch, M.D.Glas., Regius Professor of Midwifery in the University of Glasgow, 7, Newton terrace, Charing Cross, Glasgow.

1894† Campbell, John, M.A., M.D.Dubl., F.R.C.S., 21, Great Victoria street, Belfast.

1892 Campbell, John William, B.A., M.B., B.Ch.Cantab., Highclere, Oakleigh park, Whetstone, N.

1888*† Campbell, William Macfie, M.D. Edin., 1, Princes gate East, Liverpool.

1886† Carpenter, Arthur Bristowe, M.A., M.B. Oxon., Wykeham House, Bedford park, Croydon.

1872 Carter, Charles Henry, M.D., Physician to the Hospital for Women, Soho square; 45, Great Cumberland place, Hyde park, W. *Council*, 1880-2. *Trans.* 4.

1890 Carter, Robert James, M.B.Lond., 57, Acacia road, N.W.

1877 Carver, Eustace John, 62, Sandringham road, Dalston, N.E.

1887 Case, William, 34, Westbourne road, Arundel square, N.

1863† Cayzer, Thomas, Mayfield, 9, Aigburth road, Liverpool.

1875† Chaffers, Edward, F.R.C.S., Broomfield, Keighley, Yorkshire.

1894 Chaldecott, John Henry, L.R.C.P.Lond., 401, Old Kent road, S.E.

Elected

1876* Champneys, Francis Henry, M.A., M.D. Oxon., F.R.C.P., Physician-Accoucheur to, and Lecturer on Midwifery at, St. Bartholomew's Hospital; 42, Upper Brook street, W. *Council*, 1880-1. *Hon. Lib.* 1882-3. *Hon. Sec.* 1884-7. *Vice-Pres.* 1888-90. *Board Exam. Midwives*, 1883, 1888-90; *Chairman*, 1891-4. *Editor*, 1888-93. *Pres.* 1895. *Trans.* 16.

1859 Chance, Edward John, F.R.C.S., Surgeon to the Metropolitan Free Hospital and City Orthopædic Hospital; 14, Russell square, W.C.

1867*†Charles, T. Edmondstoune, M.D., F.R.C.P., 72, Via di San Niccolò da Tolentino, Rome. *Council*, 1882-4.

1874*†Charlesworth, James, M.D., Physician to the North Staffordshire Infirmary; 25, Birch terrace, Hanley, Staffordshire.

1886† Charpentier, Ambrose E. L., M.D.Durh., Rathmines House, Uxbridge.

1892† Chepmell, Charles William James, M.D. Brux., 87, Buckingham road, Brighton.

1868*†Child, Edwin, "Vernham," New Malden, Kingston-on-Thames, Surrey.

1890† Childe, Charles Plumley, B.A., F.R.C.S., Cranleigh, Kent road, Southsea.

1883† Childs, Christopher, M.A., M.D.Oxon., Pendeen, Weymouth. *Hon. Loc. Sec.*

1863*†Chisholm, Edwin, M.D., Abergeldie, Ashfield, near Sydney, New South Wales. [Per Messrs. Turner and Henderson, care of Messrs. W. Dawson, 121, Cannon street, E.C.]

1883 Clapham, Edward, M.D., 29, Lingfield road, Wimbledon. *Council*, 1892-4.

1859 Claremont, Claude Clarke, Millbrook House, 1, Hampstead road, N.W.

1879 Clarke, Reginald, South Lodge, Lee park, Lee, S.E.

1893 Clarke, W. Bruce, F.R.C.S., 46, Harley street, W.

Elected

1876† Clay, George Langsford, West View, 443, Moseley road, Highgate, Birmingham.

1889 Clemow, Arthur Henry Weiss, M.D., C.M. Edin., 101, Earl's Court road, Kensington, W.

O.F. Cleveland, William Frederick, M.D., Stuart villa, 199, Maida vale, W. *Council*, 1863-4. *Vice-Pres.* 1875-7, 1887-9. *Trans.* 1.

1881† Close, James Alex., M.B., 2031, Olive street, St. Louis, Missouri, U.S.A.

1865*†Coates, Charles, M.D., Physician to the Bath General and Royal United Hospitals; 10, Circus, Bath.

1882† Coates, Frederick William, M.D. (travelling). *Council*, 1891-3.

1875 Coffin, Richard Jas. Maitland, F.R.C.P. Ed., 98, Earl's Court road, W.

1878 Coffin, Thomas Walker, 22, Upper Park road, Haverstock hill, N.W.

1875*†Cole, Richard Beverly, M.D. Jefferson Coll. Philad., 218, Post street, San Francisco, California, U.S.

1888† Collins, Edward Tenison, 12, Windsor place, Cardiff.

1877 Colman, Walter Tawell (travelling).

1866† Coombs, James, M.D., Bedford.

1888 Cooper, Peter, L.R.C.P.Lond., Stainton Lodge, 35, Shooter's Hill road, Blackheath, S.E.

1890 Copeland, William Henry Laurence, M.B.Cantab., 59, Warwick road, Earl's Court, S.W.

1888† Corby, Henry, B.A., M.D., 19, St. Patrick's place, Cork.

1875*†Cordes, Aug., M.D., M.R.C.P., Consulting Accoucheur to the "Miséricorde;" Privat Docent for Midwifery at the University of Geneva; 12, Rue Bellot, Geneva. *Trans.* 1.

1883 Corner, Cursham, 113, Mile End road, E.

1888† Cornish, Charles Newton, L.R.C.P. Ed., 4, Southwick place, Hyde park, W.

Elected

1860*†Corry, Thomas Charles Steuart, M.D., Senior Surgeon to the Belfast General Dispensary; 1, Glenfield place, Ormeau road, Belfast. *Council*, 1867. *Vice-Pres.* 1891-3. *Hon. Loc. Sec.*

1888† Cory, Isaac Rising, L.R.C.P. Lond., Shere, Guildford.

1875 Cory, Robert, M.D., Assistant Obstetric Physician to St. Thomas's Hospital; 73, Lambeth Palace road, S.E. *Council*, 1879-81, 1884-5. *Vice-Pres.* 1887-88. *Trans.* 1.

1886† Cox, Joshua John, M.D. Ed., St. Ronan's, Clarendon road, Eccles, Manchester.

1869† Cox, Richard, M.D. St. And., Theale, near Reading. *Trans.* 1.

1893† Craig, James, M.D. Edin., Brisgow House, Beckenham.

1877 Crawford, James, M.D. Durh., Grosvenor Mansions, 80, Victoria street, S.W.

1881† Creasy, James Gideon, West House, Wrotham, Kent.

1876† Crew, John, Manor House, Higham Ferrers, Northamptonshire.

1893 Cripps, William Harrison, F.R.C.S., 2, Stratford place, W.

1889† Croft, Edward Octavius, L.R.C.P. Lond., 8, Clarendon road, Leeds.

1881† Cronk, Herbert George, M.B. Cantab., Repton, near Burton-on-Trent.

1893 Crosby, Herbert Thomas, M.A., M.B., B.C.Cantab., 19, Gordon square, W.C.

1886*†Cross, William Joseph, M.B., Horsham, Victoria, Australia.

1889† Crouch, Edward Thomas, Stoke House, Gosport.

1875* Cullingworth, Charles James, M.D., D.C.L., F.R.C.P., Obstetric Physician to, and Lecturer on Obstetric Medicine at, St. Thomas's Hospital; 46, Brook street, Grosvenor square, W. *Council*, 1883-5, 1891-3. *Vice-Pres.* 1886-8. *Board Exam. Midwives*, 1889-91. *Chairman*, 1895. *Trans.* 12.

Elected

1889*†Cursetji, Jehángir J., M.D. Brux., 94, Chundunwádi, Bombay.

1894 Cutler, Lennard, L.R.C.P.Lond., 8, Gloucester road, S.W.

1885 Dakin, William Radford, M.D., Obstetric Physician to, and Lecturer on Midwifery at, St. George's Hospital; 57, Welbeck street, Cavendish square, W. *Council*, 1889-91. *Hon. Lib.* 1892-3. *Hon. Sec.* 1894-5. *Trans.* 3.

1868 Daly, Frederick Henry, M.D., 185, Amhurst road, Hackney Downs, N.E. *Council*, 1877-9. *Vice-Pres.* 1883-5. *Trans.* 2.

1882† Dambrill-Davies, William R., Alderley Edge, Cheshire.

1893 Dauber, John Henry, M.A. Oxon., L.R.C.P. Lond., 29, Charles street, Berkeley square, W.

1889 Davies, Frederick Henry, M.B., C.M.Edin., 40, St. Stephen's avenue, Shepherd's Bush, W.

1876 Davies, Gomer, L.R.C.P. Ed., 9, Pembridge villas, Bayswater, W.

1884 Davies, John, 91, New North road, N.

1885 Davies, William Morriston, M.D., 55, Gordon square, W.C.

1892† Davis, Robert, Oakleigh, Epsom.

1877 Davson, Smith Houston, M.D., Campden villa, 203, Maida vale, W. *Council*, 1889-91.

1891 Dawson, Ernest, L.R.C.P.Lond., Linden House, High road, Leyton, E.

1889† Dawson, William Edward, L.R.C.P.I., Walton-on-Naze, near Colchester.

1859 Day, William Henry, M.D., Physician to the Samaritan Free Hospital for Women and Children; 10, Manchester square, W. *Council*, 1873-5. *Vice-Pres.* 1885-6.

1889 Des Vœux, Harold A., M.D.Brux., 4, Ashley gardens, Victoria street, S.W.

Elected

1894 Dickinson, Thomas Vincent, M.D. Lond., 33, Sloane street, S.W.

1894 Dickinson, William Gilbert, L.R.C.P. Lond., Thanet Lodge, Southfields, Wandsworth, S.W.

1894 Dickson John William, B.A., M.B., B.C. Cantab., 3, Hertford street, W.

1879† Dolan, Thomas Michael, M.D., Horton house, Halifax.

1886† Donald, Archibald, M.A., M.D. Edin., 274, Oxford road, Manchester. *Council*, 1893-5. *Trans.* 1.

1879* Doran, Alban H. G., F.R.C.S., Surgeon to the Samaritan Free Hospital; 9, Granville place, Portman square, W. *Council*, 1883-5. *Hon. Lib.* 1886-7. *Hon. Sec.* 1888-91. *Vice-Pres.* 1892-4. *Trans.* 13.

1890† Douty, Edward Henry, M.A., M.B., B.C. Cantab., 69, Bridge street, Cambridge.

1887 Dovaston, Milward Edmund.

1893 Dowding, Alexander William Woodman, M.D.Durh., Forest Lodge, Wanstead, N.E.

1884† Doyle, E. A. Gaynes, L.R.C.P., Colonial Hospital, Port of Spain, Trinidad.

O.F.† Drage, Charles, M.D., Hatfield, Herts. *Council*, 1861-4, *Trans.* 1.

1885† Drage, Lovell, M.A., M.D., B.S. (Oxon.), Burleigh Mead, Hatfield. *Council*, 1894-5.

1871† Drake-Brockman, Edward Forster, F.R.C S., L.R.C.P. Lond., Brigade-Surgeon; Superintendent Eye Infirmary, Madras; Professor of Physiology and Ophthalmology, Madras Medical College. [*Per* Messrs. Richardson and Co., East India Army Agency, 25, Suffolk street, Pall Mall, S.W.]

1884 Drake, Charles Henry, 204, Brixton hill, S.W.

1894† Drew, Henry William, F.R.C.S., Meaburn, Coombe road, Croydon.

Elected

1883 Duncan, Alexander George, M.B., 25, Amhurst park, Stamford hill, N.

O.F. Duncan, James, M.B., 8, Henrietta street, Covent garden, W.C. *Council*, 1873-4. *Vice-Pres.* 1895.

1882 Duncan, William, M.D., Obstetric Physician to, and Lecturer on Obstetric Medicine at, the Middlesex Hospital; 6, Harley street, W. *Council*, 1885-6, 1888-9. *Hon. Lib.* 1890-1. *Hon. Sec.* 1892-5. *Trans.* 2.

1893† Dunn, Philip Henry, L.R.C.P. Lond., Stevenage, Herts.

1871 Eastes, George, M.B., F.R.C.S., 35, Gloucester place, Hyde park, W. *Council*, 1878-80.

1883† Eccles, F. Richard, M.D., Professor of Gynæcology, Western University; 1, Ellwood place, Queen's avenue, London, Ontario, Canada.

1892 Eccles, William McAdam, M.B., B.S.Lond., 10, Welbeck street, Cavendish square, W.

1893 Eden, Thomas Watts, M.D., C.M.Edin., 21, Bentinck street, Cavendish square, W.

1890† Ehrmann, Albert, L.R.C.P.Lond., Bitterne, near Southampton.

1879† Elder, George, M.D., C.M., Surgeon to the Samaritan Hospital for Women, Nottingham; 17, Regent street, Nottingham.

1878† Ellery, Richard, L.R.C.P. Ed., Plympton, Devon.

1894 Ellis, Robert Kingdon, M.B., B.Ch. Oxon., 47, Granville road, Stroud Green, N.

1873*† Engelmann, George Julius, A.M., M.D., 3003, Locust street, St. Louis, Missouri, U.S.

1892† Evans, John Morgan, L.R.C.P.Lond., Llandrindod Wells, Radnorshire.

1875† Ewart, John Henry, Eastney, Devonshire place, Eastbourne.

1894 Fairweather, David, M.A., M.B., C.M.Edin., 2, Nightingale road, Wood Green, N.

Elected

1876† Farncombe, Richard, 40, Belgrave street, Balsall heath, Birmingham.

1869 Farquhar, William, M.D., Deputy Surgeon-General, 17, St. Stephen's road, Bayswater, W.

1861 Farr, Geo. F., L.R.C.P. Ed., Slade House, 175, Kennington road, S.E. *Council*, 1885.

1882† Farrar, Joseph, M.D., Gainsborough. *Trans.* 1.

1894† Fazan, Charles Herbert, L.R.C.P. Lond., Belmont, Wadhurst, Sussex.

1868* Fegan, Richard, M.D., Westcombe park, Blackheath, S.E.

1886 Fennell, David, L.K.Q.C.P.I., 20, Dalston lane, N.E.

1883 Fenton, Hugh, M.D., 27, George street, Hanover square, W.

1893 Ferguson, George Gunnis, M.B., C.M.Glas., 62, Holmdale road, West Hampstead, N.W.

1893† Finley, Harry, M.D.Lond., Cumberland Infirmary, Carlisle.

1892† Finny, W. Evelyn St. Lawrence, M.B. Dubl., Kenlis, Queen's road, Kingston hill.

1886† Fisher, Frederick Bazley, L.R.C.P. Lond., West Walk House, Dorchester.

1882† Fitzgerald, Charles Egerton, M.D., West terrace, Folkestone.

1877*†Fonmartin, Henry de, M.D., 26, Newberry terrace, Lower Bullar street, Nichols Town, Southampton.

1884† Ford, Alexander, L.R.C.P. Ed., 9, Beresford street, Waterford.

1877*†Ford, James, M.D., Sandford, Crediton, Devon.

1884 Fouracre, Robert Perriman, 20, Tollington park, N.

1886† Fowler, Charles Owen, M.D., Cotford House, Thornton heath.

1875*†Fraser, Angus, M.D., Physician and Lecturer on Clinical Medicine to the Aberdeen Royal Infirmary; 232, Union street, Aberdeen.

Elected

1888† Fraser, James Alexander, L.R.C.P. Lond., Western Lodge, Romford.

1867† Freeman, Henry W., 24, Circus, Bath. *Council*, 1891-3.

1883 Fuller, Henry Roxburgh, M.D. Cantab., 45, Curzon street, Mayfair, W. *Council*, 1893. *Trans.* 1.

1886† Furner, Willoughby, F.R.C.S., 13, Brunswick square, Brighton. *Council*, 1894-5. *Hon. Loc. Sec.*

1874* Galabin, Alfred Lewis, M.A., M.D., F.R.C.P., Obstetric Physician to, and Lecturer on Midwifery at, Guy's Hospital; 49, Wimpole street, Cavendish square, W. *Council*, 1876-8. *Hon. Lib.* 1879. *Hon. Sec.* 1880-3. *Vice-Pres.* 1884. *Treas.* 1885-8. *Pres.* 1889-90. *Trans.* 12.

1888 Galloway, Arthur Wilton, L.R.C.P. Lond., 79, New North road, N.

1863* Galton, John H., M.D., Chunam, Sylvan road, Upper Norwood, S.E. *Council*, 1874-6, 1891-2. *Vice-Pres.* 1895.

1881 Gandy, William, Hill Top, Central hill, Norwood, S.E.

1886† Garde, Henry Croker, F.R.C.S. Edin., Maryborough, Queensland.

1887 Gardiner, Bruce H. J., L.R.C.P. Ed., Gloucester House, Barry road, East Dulwich, S.E.

1894 Gardner, H. Bellamy, M.R.C.S., L.R.C.P. Lond., Chelsea Hospital for Women.

1879† Gardner, John Twiname, Northfield House, Ilfracombe.

1872† Gardner, William, M.A., M.D., Professor of Gynæcology, McGill University; Gynæcologist to the Montreal General Hospital; 109, Union avenue, Montreal, Canada.

1892† Gardner, William, M.B., C.M.Glas., 5, Collins street, Melbourne.

1876† Garner, John, 52, New Hall street, Birmingham.

1891† Garrett, Arthur Edward, L.R.C.S., & L.M.Ed., The Limes, Rickmansworth.

1873*†Garton, William, M.D., F.R.C.S., Inglewood, Aughton, near Ormskirk.

Elected

1889* Gell, Henry Willingham, M.A., M.B. Oxon., 43, Albion street, Hyde park, W.

1859* Gervis, Henry, M.D., F.R.C.P., Consulting Obstetric Physician to St. Thomas's Hospital; 40, Harley street, Cavendish square. *Council*, 1864-6, 1889-91, 1893. *Hon. Sec.* 1867-70. *Vice-Pres.* 1871-3. *Treas.* 1878-81. *Pres.* 1883-4. *Trans.* 8.

1866* Gervis, Frederick Heudebourck, 1, Fellows road, Haverstock hill, N.W. *Council*, 1877-9. *Vice-Pres.* 1892. *Trans.* 1.

1884† Gibb, Charles John, M.D., Westgate House, Newcastle-on-Tyne.

1875 Gibbings, Alfred Thomas, M.D., 93, Richmond road, Dalston, N.E. *Council*, 1885-6, 1888.

1883 Gibbons, Robert Alexander, M.D., Physician to the Grosvenor Hospital for Women and Children; 29, Cadogan place, S.W. *Council*, 1889-90. *Trans.* 1.

1894 Gibson, Henry Wilkes, L.R.C.P. Lond., 11, College crescent, South Hampstead, N.W.

1874† Gibson, James Edward, Hillside, West Cowes, Isle of Wight.

1892 Giles, Arthur Edward, M.D. Lond., M.R.C.P., Physician to Out-patients, Chelsea Hospital for Women; 57, Queen Anne street, Cavendish square, W. *Trans.* 4.

1869 Gill, William, L.R.C.P. Lond., 11, Russell square, W.C.

1891 Gimblett, William Henry, L.R.C.P.I., 34, Pembury road, Clapton, N.E.

1891† Gledden, Alfred Maitland, M.D., c/o L. Bruck, 13, Castlereagh street, Sydney, N.S.W.

1894† Goddard, Charles Ernest, L.R.C.P. Lond., Wembley, Harrow.

1871 Goddard, Eugene, M.D. Durh., North Lynne, 106, Highbury New Park, N. *Trans.* 1.

1871 *Godson, Clement, M.D., C.M.; 9, Grosvenor street, W. *Council*, 1876-7. *Hon. Sec.* 1878-81. *Vice-Pres.* 1882-4. *Board Exam. Midwives*, 1877, 1882-86. *Trans.* 5.

Elected

1893† Goodman, Roger Neville, M.A., M.B.Cantab., Elmside, Kingston-on-Thames.

1893† Gordon, Frederick William, L.R.C.P.Lond., Newmarket, Auckland, New Zealand; c/o G. Gordon, 18, Bread street, E.C.

1883 Gordon, John, M.D., 20, Wickham road, Brockley, S.E.

1869† Goss, Tregenna Biddulph, 1, The Circus, Bath. *Hon. Loc. Sec.*

1891† Gostling, William Ayton, M.D., B.S.Lond., Barningham, West Worthing.

1889 Goullet, Charles Arthur, L.R.C.P.Lond., 2, Finchley road, N.W.

1890 Gow, William John, M.D.Lond., Physician-Accoucheur in charge of Out-patients, St. Mary's Hospital; 27, Weymouth street, W. *Council*, 1893-5. *Trans.* 2.

1893† Gowan, Bowie Campbell, L.R.C.P.Lond., Raven Dene, Great Stanmore.

1893 Grant, Leonard, M.D.Edin., 9, Western villas, New Southgate, N.

1890† Gray, Harry St. Clair, M.D. Glas., 15, Newton terrace, Glasgow.

1875† Gray, James, M.D., 15, Newton terrace, Glasgow.

1890 Green, Charles David, M.D.Lond., Addison House, Upper Edmonton.

1894† Green, Charles Robert Mortimer, The Eden Hospital, Calcutta.

1887 Greenwood, Edwin Climson, L.R.C.P., 19, St. John's wood park, N.W.

1863 *Griffith, G. de Gorrequer, 34, St. George's square, S.W. *Trans.* 2.

1879* Griffith, Walter Spencer Anderson, M.D. Cantab., F.R.C.S., F.R.C.P., Assistant Physician-Accoucheur to St. Bartholomew's Hospital; 114, Harley street, W. *Council*, 1886-8, 1893-5. *Board Exam. Midwives*, 1887-9. *Trans.* 7.

Elected

1870 *Grigg, William Chapman, M.D., Physician to the Inpatients, Queen Charlotte's Lying-in Hospital; 27, Curzon street, Mayfair. *Council*, 1875-7. *Board Exam. Midwives*, 1878-9.

1888*†Grimsdale, Thomas Babington, B.A., M.B. Cantab., 50, Rodney street, Liverpool.

1882† Gripper, Walter, M.B. Cantab., The Poplars, Wallington, Surrey.

1880 Grogono, Walter Atkins, Berwick House, Broadway, Stratford, E.

1879† Grove, William Richard, M.D., St. Ives, Huntingdonshire.

1892 Gubb, Alfred Samuel, M.D. Paris, 29, Gower street, W.C.

1887† Hackney, John, M.D. St. And., Oaklands, Hythe.

1881† Hair, James, M.D., Brinklow, Coventry.

1889 Hale, Charles D. B., M.D., 3, Sussex place, Hyde park, W.

1871† Hallowes, Frederick B., Redhill, Reigate, Surrey. *Council*, 1885-6, 1888-90.

1880 Hames, George Henry, F.R.C.S., 29, Hertford street, Park lane, W.

1894 Hamilton, Bruce, L.R.C.P.Lond., "Falklands," 9, Frognal, N.W.

1894† Hamilton, David Livingston, L.R.C.P. Edin., Great Missenden, Bucks.

1887† Hamilton, John, F.R.C.S.Ed., Beechhurst House, Swadlincote, Burton-on-Trent.

1883 Handfield-Jones, Montagu, M.D. Lond., M.R.C.P., Physician-Accoucheur to, and Lecturer on Midwifery and Diseases of Women at, St. Mary's Hospital; 35, Cavendish square, W. *Council*, 1887-9. *Board Exam. Midwives*, 1894-5. *Trans.* 1.

1889† Hardwick, Arthur, M.D. Durh., Newquay, Cornwall.

1886† Hardy, Henry L. P., Holly Lodge, Richmond road, Kingston-on-Thames.

Elected

1892 HAROLD, JOHN, L.R.C.P.Lond., 91, Harley street, W.

1889 HARPER, CHARLES JOHN, L.R.C.P. Lond., Church end, Finchley, N.

1877 HARPER, GERALD S., M.B.Aber., 40, Curzon street, Mayfair, W. *Council*, 1894-5.

1878† HARRIES, THOMAS DAVIES, F.R.C.S., Grosvenor House, Aberystwith, Cardiganshire.

1867* HARRIS, WILLIAM H., M.D., 32, Cambridge gardens, W.

1880* HARRISON, RICHARD CHARLTON, 19, Uxbridge road, Ealing, W.

1893† HARRISON, SYDNEY NEVILL, M.B., B.C. Cantab., Aveley Court, Stourport.

1890† HART, DAVID BERRY, M.D.Edin., 29, Charlotte square, Edinburgh.

1886† HARTLEY, HORACE, L.R.C.P. Ed., Stone, Staffordshire.

1886† HARTLEY, REGINALD, L.R.C.P. Ed., Kirkgate House, Thirsk.

1894 HARTZHORNE, BERNARD FRED., M.R.C.S., Blenheim Lodge, High road, Chiswick.

1893† HARVEY, JOHN JORDAN, L.R.C.P.&S.Edin.

1880 HARVEY, JOHN STEPHENSON SELWYN, M.D.Durh., M.R.C.P., 1, Astwood road, Cromwell road, S.W.

1865† HARVEY, ROBERT, M.D., Abbottabad, Punjab. [Per Messrs. Cochran and Macpherson, 152, Union street, Aberdeen.] *Trans.* 1.

1886 HARVEY, SIDNEY FRED., L.R.C.P.Lond., 117A, Queen's Gate, S.W.

1892† HAWKINS-AMBLER, GEORGE ARTHUR, F.R.C.S.Ed., 162, Upper Parliament street, Liverpool.

1888† HAYCOCK, HENRY EDWARD, L.R.C.P.Ed., Ironville House, Alfreton, Derbyshire.

1893† HAYDON, THOMAS HORATIO, M.B., B.C. Cantab., 22, High street, Marlborough.

Elected

1873 Hayes, Thomas Crawford, M.A., M.D., F.R.C.P., Obstetric Physician to King's College Hospital, and Lecturer on Practical Midwifery at King's College; 17, Clarges street, Piccadilly, W. *Council*, 1876-8. *Vice-Pres.* 1890-1.

1880 Heath, William Lenton, M.D., 90, Cromwell road, Queen's gate, S.W. *Council*, 1891. *Trans.* 1.

1893 Heelas, Walter Wheeler, L.R.C.P.Lond., 2, Clifton Terrace, Chapel Ash, Wolverhampton.

1894 Helby, Ernest H., L.R.C.P. Lond., Governor's House, H.M. Prison, Wandsworth, S.W.

1892† Hellier, John Benjamin, M.D.Lond., Lecturer on Diseases of Women and Children, Yorkshire College; Surgeon to the Hospital for Women and Children, Leeds; 1, De Grey terrace, Leeds.

1890† Helme, T. Arthur, M.D.Edin., 258, Oxford road, Manchester.

1867† Hembrough, John William, M.D., Earsdon, Newcastle-on-Tyne.

1876* Herman, George Ernest, M.B., F.R.C.P., Obstetric Physician to, and Lecturer on Midwifery at, the London Hospital; 20, Harley street, Cavendish square, W. *Council*, 1878-9. *Hon. Lib.* 1880-1. *Hon. Sec.* 1882-5. *Vice-Pres.* 1886-7. *Board Exam. Midwives*, 1886-8. *Treas.* 1889-92. *Pres.* 1893-4. *Trans.* 29.

1860* Hicks, John Braxton, M.D., F.R.C.P., F.R.S., Consulting Obstetric Physician to Guy's and St. Mary's Hospitals; 34, George street, Hanover square. *Council*, 1861-2, 1869. *Hon. Sec.* 1863-5. *Vice-Pres.* 1866-8. *Treas.* 1870. *Pres.* 1871-2. *Trans.* 40.

1892† Hills, Thomas Hyde, L.R.C.P.Lond., 60, St. Andrew's street, Cambridge.

1886† Hodges, Herbert Chamney, L.R.C.P.Lond., Watton, Herts. *Trans.* 1.

O.F. Hodges, Richard, M.D., F.R.C.S., 358, Camden road, N. *Trans.* 3.

Elected

1886† Holberton, Henry Nelson, L.R.C.P. Lond., East Molesey.

1875 Hollings, Edwin, M.D., 25, Endsleigh gardens, N.W. *Council*, 1888-90. *Vice-Pres.* 1893-4.

1859 Holman, Constantine, M.D., 26, Gloucester place, Portman square, W. *Council*, 1867-9, 1895. *Vice-Pres.* 1870-1.

1891† Holman, Robert Colgate, Whithorne House, Midhurst, Sussex.

1864* Hood, Wharton Peter, M.D., 11, Seymour street, Portman square, W.

1884 Hopkins, John, L.R.C.P. Ed., 93, Camberwell road, S.E.

1894† Horne, Edward, M.R.C.S., St. Mary's street, Wallingford.

1883* Horrocks, Peter, M.D., F.R.C.P. Lond., Assistant Obstetric Physician to, and Demonstrator of Practical Obstetrics at, Guy's Hospital; 26, St. Thomas's street, S.E. *Council*, 1886-7. *Hon. Lib.* 1888-9. *Hon. Sec.* 1890-3. *Vice-Pres.* 1894-5. *Trans.* 2.

1876 Horsman, Godfrey Charles, 22, King street, Portman square, W.

1893† Hosker, James Atkinson, Kirkleatham, Boscombe, Bournemouth.

1883 Hoskin, Theophilus, L.R.C.P. Lond., 186, Amhurst road, N.E.

1883 Houchin, Edmund King, L.R.C.P. Ed., 23, High street, Stepney, E.

1884† Hough, Charles Henry, Full street, Derby.

1877 Howell, Horace Sydney, M.D., East Grove House, 18, Boundary road, St. John's Wood, N.W.

1879† Hubbard, Thomas Wells, Barming place, Maidstone.

1894 Hudleston, Wilfred E., L.R.C.P. Lond., Royal Berks Hospital, Reading.

1889† Humphrys, Charles Beyer, L.R.C.P. & S. Edin., Eagle House, Blandford, Dorset.

Elected

1884*†Hurry, Jamieson Boyd, M.D. Cantab., 43, Castle street, Reading. *Council*, 1887-9. *Trans.* 2.

1878† Husband, Walter Edward, Ebor Lodge, Higher Broughton, Manchester.

1894† Ilott, Herbert James, M.D. Aber., 57, High street, Bromley, Kent.

1883† Inman, Robert Edward, Gadshill Cottage, Higham, Kent.

1884† Irwin, John Arthur, M.A., M.D., 14, West Twenty-ninth street, New York.

1883† Jackson, George Henry, St. Levans, Upperton, Eastbourne.

1873† Jakins, William Vosper, L.R.C.P. Ed., 165, Collins street East, Melbourne.

1872† Jalland, Robert, Horncastle, Lincolnshire. *Trans.* 1.

1890† James, Charles Henry, L.R.C.P.Lond., Surg. Indian Army ; Lahore, India.

1894 James, James Prytherch, L.R.C.P.I., 37, Osborne terrace, Clapham road, S.W.

1885† Jamieson, Robert Alexander, M.D., Shanghai. [Per Messrs. Henry S. King and Co., 65, Cornhill, E.C.]

1886 Jamison, Arthur Andrew, M.D. Glas., 18, Lowndes street, S.W.

1883*†Jenkins, Edward Johnstone, M.D. Oxon., 213, Macquarie street, Sydney.

1877† Jenks, Edward W., M.D., 84, Lafayette avenue, Detroit. Michigan, U.S.

1882 Jennings, Charles Egerton, M.D. Durh., F.R.C.S. Eng., Assistant Surgeon to the North-West London Hospital ; 48, Seymour street, Portman square, W.

1888† Johnson, Arthur Jukes, M.B., 52, Bloor street West, Toronto, Ontario, Canada.

1877† Johnson, Samuel, M.D., 5, Hill street, Stoke-upon-Trent.

1881 Johnston, Joseph, M.D., 24, St. John's Wood park, N.W. *Council*, 1891-2.

Elected

1894 Johnstone, R. W., M.D., B.Ch., 36, Cheyne Court, Chelsea, S.W.

1879 Johnston, Wm. Beech, M.D., 157, Jamaica road, Bermondsey, S.E.

1868† Jones, Evan, Ty-Mawr, Aberdare, Glamorganshire. *Council*, 1886-8. *Vice.-Pres.* 1890-1. *Hon. Loc. Sec.*

1894 Jones, Evan, L.R.C.P. Lond., 89, Goswell road, E.C.

1878 Jones, H. Macnaughton, M.D., F.R.C.S.I. and Edin., 141, Harley street, Cavendish square, W.

1881† Jones, James Robert, M.B., 171, Donald street, Winnipeg, Manitoba, Canada.

1894† Jones, John Arnallt, L.R.C.P. Lond., Heathmont, Aberavon, Port Talbot, Glamorganshire.

1887† Jones, J. Talfourd, M.B. Lond., Consulting Physician to the Breconshire Infirmary, Rose Bank, South terrace, Eastbourne.

1886 Jones, Lewis, M.D., Oakmead, Balham, S.W.

1885† Jones, P. Sydney, M.D., 16, College street, Hyde park, Sydney. [Per Messrs. D. Jones and Co., 122 and 124, Wool Exchange, Basinghall street, E.C.]

1873† Jones, Philip W., River House, Enfield.

1886† Jones, William Owen, The Downs, Bowdon, Manchester.

1879† Joubert, Charles Henry, M.B. Lond., F.R.C.S. Eng., Surgeon-Major, Bengal Medical Department; Obstetric Physician to Eden Hospital, and Professor of Midwifery and Diseases of Women and Children, Calcutta Medical College; 6, Harington street, Calcutta.

1878† Judson, Thomas Robert, L.R.C.P. Lond., Hayman's Green, West Derby, Liverpool.

1875† Jukes, Augustus, M.B., N. W. Mounted Police, Regina, N.-W. Territory, Canada.

1878† Kane, Nathaniel H. K., M.D., Lanherne, Kingston hill, Surrey.

Elected

1890† KANTHACK, ALFREDO ANTUNES, M.D. Lond., St. Bartholomew's Hospital, E.C.

1884 KEATES, WILLIAM COOPER, L.R.C.P., 2, Tredegar villas, East Dulwich road, S.E.

1880† KEBBELL, ALFRED, Flaxton, York.

O.F. KEELE, GEORGE THOMAS, 81, St. Paul's road, Highbury, N. *Council*, 1885.

1883† KEELING, JAMES HURD, M.D., 267, Glossop road, Sheffield. *Hon. Loc. Sec.*

1890 KEITH, SKENE, M.B., C.M.Edin., 42, Charles street, Berkeley Square, W.

1894 KELLETT, ALFRED FEATHERSTONE, M.B., B.C.Cantab., 146, Lewisham road, S.E.

1874* KEMPSTER, WILLIAM HENRY, M.D., Chesterfield, Clapham common, North side, S.W.

1886 KENNEDY, ALFRED EDMUND, L.R.C.P. Ed., Chesterton House, Plaistow, E.

1879 KER, HUGH RICHARD, L.R.C.P.Ed., Tintern, 2, Balham hill, S.W.

1872 KERR, NORMAN S., M.D., F.L.S., 42, Grove road, Regent's park, N.W.

1877*†KERSWILL, JOHN BEDFORD, M.R.C.P. Ed., Fairfield, St. German's, Cornwall.

1878† KHORY, RUSTONJEE NASERWANJEE, M.D., M.R.C.P., Medical Syndic, Bombay University; Honorary Physician, Bai Motlibai Obstetric and Gynæcological Hospital; Hormazd Villa, Khumballa hill, Bombay.

O.F. KIALLMARK, HENRY WALTER, 5, Pembridge gardens, Bayswater. *Council*, 1879-80.

1892† KINGSCOTE, ERNEST, M.B., C.M.Edin., The Hall, Salisbury.

1892† KINSEY-MORGAN, AUGUSTUS, 1, Stanhope gardens, Bourne mouth.

1872* KISCH, ALBERT, 186, Sutherland avenue, W.

Elected

1876† KNOTT, CHARLES, M.R.C.P. Ed., Liz Ville, Elm grove, Southsea.

1889 LAKE, GEORGE ROBERT, 72, Gloucester crescent, Hyde park, W.

1867* LANGFORD, CHARLES P., Sunnyside, Hornsey lane, N.

1883 LANGLEY, AARON, L.R.C.P. Ed., 149, Walworth road, S.E.

1886 LANKESTER, HERBERT HENRY, M.D. Lond., Church Missionary Society, Salisbury square, E.C.

1893† LAVER, HENRY, Head street, Colchester.

1887 LAW, WILLIAM THOMAS, M.D. Edin., 9, Norfolk crescent, W.

1875† LAWRENCE, ALFRED EDWARD AUST, M.D., Physician-Accoucheur to the Bristol General Hospital; 19, Richmond hill, Clifton, Bristol. *Council*, 1885-6, 1888. *Vice-Pres.*, 1889-90. *Hon. Loc. Sec. Trans.* 1.

1894 LEA, ARNOLD W. W., M.D., B.S.Lond., F.R.C.S., 28, Cheyne row, Chelsea, S.W.

1894† LEAHY, ALBERT WILLIAM DENIS, M.D. Durh., F.R.C.S., 6, Elysium road, Calcutta.

1884*†LEDIARD, HENRY AMBROSE, M.D., 35, Lowther street, Carlisle. *Council*, 1890-2. *Trans.* 1.

1894 LEE, SIDNEY HERBERT, B.A., M.B., B.C.Cantab., Middlesex Hospital, W.

1887† LEES, EDWIN LEONARD, M.D., C.M. Ed., 2, The Avenue, Redland road, Bristol.

1885 LEWERS, ARTHUR H. N., M.D. Lond., M.R.C.P., Obstetric Physician to the London Hospital; 60, Wimpole street, W. *Council*, 1887-9, 1893. *Board Exam. Midwives* 1895. *Trans.* 8.

1877† LEWIS, JOHN RIGGS MILLER, M.D., Deputy-Surgeon General Markham Lodge, Liverpool road, Kingston hill, Surrey.

1885† LIDIARD, SYDNEY ROBERT, L.R.C.P. Ed., Berkeley House, Anlaby road, Hull.

1875† LIEBMAN, CARLO, M.D. Vienna, Principal Surgeon, Trieste Civil Hospital, Trieste, Austria. *Trans.* 1.

Elected

1894 Livermore, William Leppingwell, L.R.C.P. Lond., 52, Stapleton Hall road, Stroud green, N.

1868 Llewellyn, Evan, L.R.C.P. Ed., 114, Bethune road, Stamford hill, N.

1872*†Lock, John Griffith, M.A., 2, Rock terrace, Tenby.

1893† Logan, Roderic Robert Walter, Church street, Ashby-de-la-Zouch.

1859† Lombe, Thomas Robert, M.D., Bemerton, Torquay.

1894 Loos, William Christopher, L.R.C.P. Lond., Mayfield, 10, Hillcrest road, Sydenham, S.E.

1890 Low, Harold, M.B.Cantab., 4, Sydney place, Onslow square.

1893† Lowe, Walter George, M.D. Lond., F.R.C.S., Burton-on-Trent.

1890 Lubbock, Edgar Ashley, L.R.C.P.Lond., 4, Westfield terrace, Fulham road, S.W.

1878*†Lycett, John Allan, M.D., Gatecombe, Wolverhampton.

1871† McCallum, Duncan Campbell, M.D., Emeritus Professor, McGill University; 45, Union avenue, Montreal, Canada. *Trans.* 4.

1890 McCann, Frederick John, M.B., C.M.Edin., M.R.C.P., Physician to Out-patients at the Samaritan Hospital; 47, Welbeck street, Cavendish square, W. *Trans.* 2.

1894† McCausland, Albert Stanley, M.D. Brux., Church Hill House, Swanage.

1890 McCaw, John Dysart, F.R.C.S., Ivy House, Lincoln road, East Finchley, N.

1894† McDonnell, Æneas John, M.B. Sydney, Toowoomba, Queensland.

1892† Mackay, William John, M.B., M.Ch. Sydney, 36, College street, Hyde Park, Sydney, N.S.W.

1879† Mackeough, George T., M.D., Chatham, Ontario, Canada.

Elected

O.F.† Mackinder, Draper, M.D., Consulting Surgeon to the Gainsborough Dispensary; Gainsborough, Lincolnshire, *Council*, 1871-3. *Trans.* 2.

1894† McKisack, Henry Lawrence, M.D.Dubl., 15, College square east, Belfast.

1893 Maclean, Ewen John, M.D., C.M. Edin., 51, Linden gardens, Kensington, W.

1886 McMullen, William, L.K.Q.C.P.I., 319A, Brixton road, S.W.

1894† McOscar, John, L.R.C.P. Lond., Stoneleigh, Watlington, Oxon.

1893 Macphail, Archibald Lamont, L.F.P.S. & L.M. Glas., 138, Stoke Newington road, N.

1884 Malcolm, John D., M.B., C.M., Surgeon to the Samaritan Free Hospital; 13, Portman street, W. *Council*, 1894-5.

1871† Malins, Edward, M.D., Obstetric Physician to the General Hospital, Professor of Midwifery at Mason College, Birmingham; 12, Old square, Birmingham. *Council*, 1881-3. *Vice-Pres.* 1884-6. *Hon. Loc. Sec.*

1868*†March, Henry Colley, M.D., 2, West street, Rochdale. *Council*, 1890-2.

1887 Mark, Leonard P., L.R.C.P. Lond., 61, Cambridge street, Hyde-park square, W.

1860† Marley, Henry Frederick, The Nook, Padstow, Cornwall.

1862*†Marriott, Robert Buchanan, Swaffham, Norfolk.

1887† Marsh, O. E. Bulwer, L.R.C.P. Ed., Parkdale, Clytha park, Newport, Monmouthshire.

1890† Martin, Christopher, M.B., C.M.Edin., 22, Broad street, Birmingham. *Trans.* 1.

1887† Mason, Arthur Henry, L.R.C.P.Lond., Oakwood, Walton-on-Thames.

1884 Massey, Hugh Holland, 3, Peckham road, Camberwell, S.E.

Elected

1884 MASTERS, JOHN ALFRED, M.D.Durh., 57, Lexham gardens, Kensington, W.

1883 MAURICE, OLIVER CALLEY, 75, London street, Reading. *Council*, 1888-90.

1890 MAY, CHICHESTER GOULD, M.A., M.D.Cantab., Assistant Physician to the Grosvenor Hospital for Women and Children; 26, Walton street, Pont street, S.W.

1877 MAY, LEWIS JAMES, Bountis Thorne, Seven Sisters road, Finsbury park, N.

1884† MAYNARD, EDWARD CHARLES, L.R.C.P.Ed., Leslie villa, The Vineyard, Richmond.

1891† MAYNER, ALFRED EDGAR, M.D.Montreal, 87, Hanover street, Kingston, Jamaica.

1885† MELLER, CHARLES BOOTH, L.R.C.P. Ed., Cowbridge, Glamorganshire.

1886 MENNELL, ZEBULON, 1, Royal crescent, Notting hill, W.

1882 MEREDITH, WILLIAM APPLETON, M.B., C.M., Surgeon to the Samaritan Free Hospital for Women and Children; 21, Manchester Square, W. *Council*, 1886-8. *Vice-Pres.* 1891-3. *Trans.* 3.

1893 MESQUITA, S. BUENO DE, M.D., B.S.Lond., 113, Petherton road, Highbury New park, N.

1893† MICHIE, HARRY, M.B. Aber., 27, Regent street, Nottingham.

1875*†MILES, ABIJAH J., M.D., Professor of Diseases of Women and Children in the Cincinnati College of Medicine, Cincinnati, Ohio, U.S.

1876† MILLMAN, THOMAS, M.D., 490, Huron street, Toronto, Ontario, Canada.

1880† MILLS, ROBERT JAMES, M.B., M.C., 35, Surrey street, Norwich.

1876 MILSON, RICHARD HENRY, M.D., 88, Finchley road, South Hampstead, N.W. *Council*, 1890.

Elected

1892† Milton, Herbert M. Nelson, Kasr-el-Aini Hospital, Cairo, Egypt.

1869*†Minns, Pembroke R. J. B., M.D., Thetford, Norfolk.

1867* Mitchell, Robert Nathal, M.D., 27, Fitzjohn's Avenue, N.W.

1894† Mondelet, William Henry, M.D., 1, Gladstone terrace, Brighton.

1893† Montbrun, D. Antonio de, L.R.C.P. Lond., Port of Spain, Trinidad, W.I.

1877 Moon, Frederick, M.B., Bexley house, Greenwich, S.E.

1859† Moorhead, John, M.D., Surgeon to the Weymouth Infirmary and Dispensary; Weymouth, Dorset.

1888 Morison, Alexander, M.D. Ed., 14, Upper Berkeley street, Portman square, W.

1890 Morris, Charles Arthur, M.A., M.B., B.C.Cantab., F.R.C.S., 29, Eccleston street, Eaton square, S.W.

1883 Morris, Clarke Kelly, Gordon Lodge, Charlton road, Blackheath, S.E.

1893 Morrison, James, L.R.C.P. Lond., St. Bartholomew's Hospital, E.C.

1893† Morse, Thomas Herbert, F.R.C.S., 10, Upper Surrey street, Norwich.

1891 Mortlock, Charles, L.R.C.P.Lond., 27, Oxford square, Hyde park, W.

1886† Morton, Shadforth, M.D. Durham, 24, Wellesley road, Croydon.

1879 Moullin, James A. Mansell, M.A., M.B., Assistant Physician to the Hospital for Women and Children, 69, Wimpole street, Cavendish square, W. *Trans.* 1.

1893 Muir, Robert Douglas, L.R.C.P.Lond., 286, New Cross road, S.E.

1885 Murray, Charles Stormont, L.R.C.S. and L.M. Ed., 85, Gloucester place, Portman square, W.

1893† Murray, Robert Milne, M.B. Edin., 10, Hope street, Edinburgh.

Elected

O.F. Musgrave, Johnson Thomas, L.R.C.P. Ed., 13, College terrace, Belsize park, N.W. *Council*, 1859-60. *Trans.* 1.

1888 Myddelton-Gavey, Edward Herbert, 94, Wimpole street, W.

1893† Nairne, John Stuart, F.R.C.S. Ed., 197, Pitt street, Glasgow.

1887 Napier, A. D. Leith, M.D. Aber., M.R.C.P. Lond., F.R.S. Edin., Physician to the Royal Maternity Charity; 67, Grosvenor street, W. *Trans.* 2.

1892† Nash, W. Gifford, F.R.C.S., 36, St. Peter's, Bedford.

1859† Neal, James, M.D., Parterre, Sandown, Isle of Wight.

1882† Nesham, Thomas Cargill, M.D., Lecturer on Midwifery in the University of Durham College of Medicine at Newcastle-on-Tyne; 12, Ellison place, Newcastle-on-Tyne. *Council*, 1889-91. *Vice-Pres.* 1895.

1859*†Newman, William, M.D., Surgeon to the Stamford and Rutland Infirmary; Barn Hill House, Stamford, Lincolnshire. *Council*, 1873-5. *Vice-Pres.* 1876-7. *Trans.* 5.

1889† Newnham, William Harry Christopher, M.A., M.B.Cantab., 1, Leicester place, Clifton, Bristol.

1893† Nichol, Frank Edward, M.A., M.B., B.C.Cantab., 11, Ethelbert Terrace, Margate.

1873† Nicholson, Arthur, M.B. Lond., 30, Brunswick square, Brighton.

1894 Nicholson, Edgar, M.R.C.S., 42, Portland road, Notting hill, W.

1879† Nicholson, Emilius Rowley, M.D., 19, Cornwallis gardens, Hastings.

1894 Nicoll, Thomas Vere, L.R.C.P., M.R.C.S., Saintbury, Upper Clapton, N.E

1876 Nix, Edward James, M.D., 11, Weymouth street, W. *Council*, 1889-90.

1882† Norman, John Edward, Lismore House, Hebburn-on-Tyne.

Elected

1883† Nunn, Philip W. G., L.R.C.P. Lond., Maplestead, Christchurch road, Bournemouth.

1884† Oakes, Arthur, M.D., Warialda, Portarlington road, Bournemouth.

1880† Oakley, John, Holly House, Ward's end, Halifax, Yorkshire.

1894 O'Callaghan, Robert Thomas Alexander, F.R.C.S.I., 137, Harley street, W.

1886 Ogle, Arthur Wesley, L.R.C.P. Lond., 90, Cannon street, E.C.

O.F. Oldham, Henry, M.D., F.R.C.P., Consulting Obstetric Physician to Guy's Hospital; 4, Cavendish place, Cavendish square, W. *Vice-Pres.* 1859. *Council*, 1860, 1865-6. *Treas.* 1861-2. *Pres.* 1863-4. *Trans.* 1. *Trustee.*

1888 Oliver, Franklin Hewitt, L.R.C.P. Lond., 2, Kingsland road, N.E.

1889 Oliver, James, M.D., F.R.S. Edin., F.L.S., Physician to the Hospital for Women, Soho square; 18, Gordon square, W.C.

1884 Openshaw, Thomas Horrocks, M.B., M.S., 16, Wimpole street, W.

1890† Osburn, Harold Burgess, L.R.C.P., Bagshot, Surrey.

1877† Osterloh, Paul Rudolph, M.D. Leipzic, Physician for Diseases of Women, Diaconissen Hospital; 16, Sidonienstr., Dresden.

1892 Owen, Samuel Walshe, L.R.C.P.Lond., 10, Shepherd's Bush road, W.

1889* Page, Harry Marmaduke, M.D.Brux., F.R.C.S., 107, London wall, E.C.

1891† Page, Herbert Markant, M.D.Brux., 16, Prospect hill, Redditch.

1883 Palmer, John Irwin, 47, Queen Anne street, Cavendish square, W.

1877* Paramore, Richard, M.D., 2, Gordon square, W.C.

Elected

1867*†Parks, John, Bank House, Manchester road, Bury, Lancashire.

1887 Parsons, John Inglis, M.D.Durh., M.R.C.P., Physician to Out Patients, Chelsea Hospital for Women, 3, Queen street, Mayfair, W. *Trans.* 1.

1880 Parsons, Sidney, 78, Kensington Park road, W.

1889 Parsons, Thomas Edward, Paddock House, Ridgeway, Wimbledon.

1865*†Paterson, James, M.D., Hayburn Bank, Partick, Glasgow.

1882* Peacey, William, M.D., 11, Breakspears road, Brockley, S.E.

1894 Peake, Solomon, M.R.C.S., 118, Percy road, Shepherd's Bush, W.

1864 Pearson, David Ritchie, M.D., 23, Upper Phillimore place, Kensington, W. *Council*, 1895.

1871 Pedler, George Henry, 6, Trevor terrace, Rutland gate, S.W.

1880*†Pedley, Thomas Franklin, M.D., Rangoon, India. *Trans.* 1.

1881† Perigal, Arthur, M.D., New Barnet, Herts. *Council*, 1892–3.

1893 Perkins, George C. Steele, M.B., C.M.Edin., 32, Weymouth street, W.

1871† Perrigo, James, M.D., 53, Union avenue, Montreal, Canada. *Hon. Loc. Sec.*

1879*†Pesikaka, Hormasji Dosabhai, 23, Hornby row, Bombay.

1883 Pettifer, Edmund Henry, 32, Stoke Newington green, N.

1894 Petty, David, M.B., C.M.,Edin., 6, High road, South Tottenham, N.E.

1879 Phillips, George Richard Turner, 28, Palace court, Bayswater hill, W. *Council*, 1891.

1882 Phillips, John, M.A., M.D. Cantab., F.R.C.P., Assistant Obstetric Physician to King's College Hospital; 71, Grosvenor street, W. *Council*, 1887-9, 1893. *Hon. Lib.* 1894-5. *Board Exam. Midwives*, 1892-4. *Trans.* 8.

1891 Phillips, W. E. Picton, 38, Walsingham House, Piccadilly.

Elected

1878 PHILPOT, JOSEPH HENRY, M.D., 61, Chester square, S.W. *Council*, 1891.

1876 PICARD, P. KIRKPATRICK, M.D., 59, Abbey road, St. John's Wood, N.W.

1889† PINHORN, RICHARD, L.R.C.P. Lond., 5, Cambridge terrace, Dover.

1889† PLAYFAIR, DAVID THOMSON, M.D., C.M. Edin., Redwood House, Bromley, Kent.

1893 PLAYFAIR, HUGH JAMES MOON, M.D. Lond., 9, Cliveden place, Eaton square, S.W.

1864* PLAYFAIR, W. S., M.D., LL.D., F.R.C.P., Physician-Accoucheur to H.I. & R.H. the Duchess of Edinburgh; Professor of Obstetric Medicine in King's College, and Obstetric Physician to King's College Hospital, 31, George street, Hanover square, W. *Council*, 1867. 1883-5. *Hon. Librarian*, 1868-9. *Hon. Sec.* 1870-72. *Vice-Pres.* 1873-5. *Pres.* 1879-80. *Trans.* 15.

1880 POCOCK, FREDERICK ERNEST, M.D., The Limes, St. Mark's road, Notting hill, W.

1883 POCOCK, WALTER, 374, Brixton road, S.W.

1891 POLLOCK, WILLIAM RIVERS, M.B., B.C.Cantab., Assistant Obstetric Physician to the Westminster Hospital, 56, Park street, Grosvenor square, W. *Council*, 1895.

1876 POPE, H. CAMPBELL, M.D., F.R.C.S., Broomsgrove Villa, 280, Goldhawk road, Shepherd's Bush, W.

1891† POPE, HENRY SHARLAND, M.B., B.C.Cantab., Castle Bailey, Bridgwater.

1888 POPHAM, ROBERT BROOKS, L.R.C.P.Lond., 67, Bartholomew road, Camden road, N.W.

1882† PORTER, JOSEPH FRANCIS, M.D., Helmsley, Yorkshire.

1864* POTTER, JOHN BAPTISTE, M.D., F.R.C.P., Obstetric Physician to, and Lecturer on Midwifery and Diseases of Women at, the Westminster Hospital; 20, George street, Hanover square, W. *Council*, 1872-6, 1890-2. *Hon. Lib.* 1877-8. *Vice-Pres.* 1879-81. *Treas.* 1882-4, 1893-5. *Board Exam. Midwives*, 1883-4. *Pres.* 1885-6. *Trans.* 1.

Elected

1894† Pound, Clement, L.R.C.P. Lond., High street, Odiham, Hants.

1893 Powell, Herbert Edward, Glenarm House, Upper Clapton, N.E.

1884† Powell, John James, L.R.C.P. Lond., Norwood Lodge, Weybridge.

1885† Praeger, Emil Arnold, Rooms 56—57, Potomac Block, Broadway, Los Angeles, Cal.

1886 Prangley, Henry John, L.R.C.P. Lond., Tudor House, 197, Anerley road, Anerley, S.E.

1893† Pratt, William Sutton, M.D., Alma House, Rugby.

1880* Prickett, Marmaduke, M.A.Cantab., M.D., Physician to the Samaritan Hospital; 27, Oxford square, W. *Council*, 1892.

O.F.* Priestley, Sir William O., M.D., LL.D., F.R.C.P., Consulting Obstetric Physician to King's College Hospital; 17, Hertford street, Mayfair, W. *Council*, 1859-61, 1865-6. *Vice-Pres.* 1867-9. *Pres.* 1875-6. *Trans.* 6.

1893 Probyn-Williams, Robert James, M.D.Durh., 22, Duke street, Portland place.

1876*†Quirke, Joseph, L.R.C.P. Ed., The Oaklands, Hunter's road, Handsworth, Birmingham.

1861 Rasch, Adolphus A. F., M.D., Physician for Diseases of Women to the German Hospital; 7, South street, Finsbury square, E.C. *Council*, 1871-3. *Trans.* 6.

1878† Rawlings, John Adams, M.R.C.P.Ed., Preswylfa, Swansea.

1870* Ray, Edward Reynolds, Dulwich, S.E.

1894 Rayner, Herbert Edward, F.R.C.S., 68, Porchester terrace, W.

1860* Rayner, John, M.D., Swaledale House, Highbury quadrant, N.

1879 Read, Thomas Laurence, 11, Petersham terrace, Queen's gate, S.W. *Council*, 1892.

Elected

1874 Rees, William, Priory House, 129, Queen's crescent, Haverstock hill, N.W.

1879† Reid, William Loudon, M.D., Professor of Midwifery and Diseases of Women and Children, Anderson's College; Physician to the Glasgow Maternity Hospital; 7, Royal crescent, Glasgow.

1889 Remfry, Leonard, M.A., M.D., B.C. Cantab., Assistant Obstetric Physician to, and Assistant Lecturer on Obstetric Medicine at, St. George's Hospital; 60, Great Cumberland place, Hyde park, W. *Council*, 1894-5. *Trans.* 2.

1893† Renshaw, Israel James Edward, F.R.C.S.Edin., Gorse Lea, Sale, near Manchester.

1875*†Rey, Eugenio, M.D., 39, Via Cavour, Turin.

1890 Reynolds, John, M.D.Brux., 11, Brixton hill, S.W.

1872† Richardson, William L., M.D., A.M., Professor of Obstetrics in Harvard University; Physician to the Boston Lying-in Hospital; 225, Commonwealth avenue, Boston, Massachusetts, U.S.

1889† Richmond, Thomas, L.R.C.P. Ed., 2, West garden street, Glasgow.

1872† Rigden, George, Surgeon to the Canterbury Dispensary; 60, Burgate street, Canterbury. *Trans.* 1. *Hon. Loc. Sec.*

1871* Rigden, Walter, M.D. St. And., 16, Thurloe place, S.W. *Council*, 1882-3. *Trans.* 1.

1892 Roberts, Charles Hubert, M.B.Lond., F.R.C.S. Eng., M.R.C.P., 21, Welbeck street, Cavendish square, W.

O.F.*†Roberts, David Lloyd, M.D., F.R.C.P., F.R.S. Edin., Obstetric Physician to the Manchester Royal Infirmary; and Lecturer on Clinical Midwifery and the Diseases of Women in Owens College; 11, St. John street, Deansgate, Manchester. *Council*, 1868-70, 1880-2. *Vice-Pres.* 1871-2. *Trans.* 5.

1867* Roberts, David W., M.D., 56, Manchester street, Manchester square, W.

Elected

1890† Roberts, Hugh Jones, Sea View, Penygroes, R.S.O., N. Wales.

1883 Roberts, John Coryton, L.R.C.P. Ed., 71, Peckham rye, S.E.

1893 Roberts, Thomas, 95, Tredegar road, Bow, E.

1894 Robertson, Cecil, M.B., C.M.Aber., 12, Granville road, Southfields, Wandsworth, S.W.

1874 Robertson, William Borwick, M.D., St. Anne's, Thurlow park road, West Dulwich, S.E.

1892 Robinson, George H. Drummond, M.D., B.S. Lond., 84, Park street, Grosvenor square, W.

1887 Robinson, Hugh Shapter, L.R.C.P. Ed., Talfourd House, Camberwell, S.E.

1884† Robinson, Luke, M.R.C.P. Lond., 533, Sutter street, San Francisco, California.

1892 Robinson, Mark, L.R.C.P. Lond., Geraldine Lodge, 75, East hill, Wandsworth, S.W.

1890† Robson, A. W. Mayo, F.R.C.S., 7, Park square, Leeds.

1876† Roe, John Withington, M.D., Ellesmere, Salop.

1874† Roots, William Henry, Canbury House, Kingston-on-Thames.

1874 Roper, Arthur, M.D.St.And., Colby, Lewisham hill, S.E. *Council*, 1886-8.

1865*† Roper, George, M.D., Consulting Physician to the Royal Maternity Charity; Oulton Lodge, Aylsham, Norfolk. *Council*, 1875-7, 1883-5. *Vice-Pres.* 1879-81, 1889, *Board Exam. Midwives*, 1880-1, 1883-5. *Trans.* 10.

1859 Rose, Henry Cooper, M.D., Penrose House, Hampstead, N.W. *Council*, 1875-7. *Trans.* 4.

1893† Rosenau, Albert, M.D., Hôtel Victoria, Kissingen, Bavaria.

1884† Rossiter, George Frederick, M.B., Surgeon to the Weston-super-Mare Hospital; Cairo Lodge, Weston-super-Mare.

Elected

1884† Roughton, Walter, F.R.C.S., Cranborne House, New Barnet.

1882 Routh, Amand, M.D., B.S., Assistant Obstetric Physician to, and Teacher of Practical Obstetrics and Gynæcology at, Charing Cross Hospital; 14A, Manchester square, W. *Council*, 1886-8. *Board Exam. Midwives*, 1893-5. *Trans.* 3.

O.F.* Routh, Charles Henry Felix, M.D., Consulting Physician to the Samaritan Free Hospital for Women and Children; 52, Montagu square, W. *Council*, 1859-61. *Vice-Pres.* 1874-6. *Trans.* 13.

1887*†Rowe, Arthur Walton, M.D. Dur., 1, Cecil street, Margate.

1881† Roworth, Alfred Thomas, Grays, Essex.

1886 Rushworth, Frank, M.D. Lond., 1A, Goldhurst terrace, South Hampstead, N.W.

1888† Rushworth, Norman, L.R.C.P. Lond., Beechfield, Walton-on-Thames.

1886† Rutherfoord, Henry Trotter, B.A., M.B. Cantab., Park street, Taunton. *Council*, 1892-3. *Trans.* 1.

1866*†Saboia, Baron V. de, M.D., Director of the School of Medicine, Rio de Janeiro; 7, Rua dom Affonso, Petropolis, Rio Janeiro. *Trans.* 2.

1864*†Salter, John H., D'Arcy House, Tolleshunt d'Arcy, Kelvedon, Essex. *Council*, 1894-5.

1868* Sams, John Sutton, St. Peter's Lodge, Eltham road, Lee, S.E. *Council*, 1892.

1886† Sanderson, Robert, M.B. Oxon., 98, Montpellier road, Brighton.

1872 Sangster, Charles, 148, Lambeth road, S.E.

1870† Saul, William, M.D., Lyndthorpe, Boscombe, Bournemouth.

1891 Saunders, Frederick William, M.B., B.C.Cantab., Chieveley House, near Newbury.

1872† Savage, Thomas, M.D., Surgeon to the Birmingham and Midland Hospital for Women; 33, Newhall street, Birmingham. *Council*, 1878-80.

Elected

1877 Savory, Charles Tozer, M.D., 6, Douglas road, Canonbury, N. *Trans.* 1.

1894† Savory, Horace, M.A., M.B., B.C. Cantab., Haileybury College, Hertford.

1890 Schacht, Frank Frederick. B.A., M.D.Cantab., 168, Earl's Court road, S.W.

1870† Scott, John, M.D., Cramond House, Sandwich.

1888 Scott, Patrick Cumin, B.A., M.B. Cantab., 38, Shooter's Hill road, Blackheath, S.E.

1866 Sequeira, James Scott, 68, Leman street, Goodman's fields, E., and Crescent House, Cassland crescent, Cassland road, South Hackney, N.E.

1882 Serjeant, David Maurice, M.D., 1, The Terrace, Camberwell, S.E.

1875 Seton, David Elphinstone, M.D., 1, Emperor's gate, S.W. *Council*, 1884.

1894† Sharpin, Archdale Lloyd, L.R.C.P. Lond., 2, Kimbolton road, Bedford.

O.F.† Sharpin, Henry Wilson, F.R.C.S., Consulting Surgeon to the Bedford General Infirmary; 1, St. Paul's square, Bedford. *Council*, 1871-3. *Trans.* 1. *Hon. Loc. Sec.*

1887 Shaw, John, M.D. Lond., Obstetric Physician to the North West London Hospital; 34, Queen Anne street, Cavendish square, W. *Trans.* 2.

1891 Shaw-Mackenzie, John Alexander, M.B.Lond., 24, Savile row, W.

1890 Silk, John Frederick William, M.D. Lond., 29, Weymouth street, Portland place, W.

1874† Sinclair, Alexander Doull, M.D., Consulting Physician to the Boston Lying-in Hospital; 35, Newbury street, Boston, Massachusetts, U.S.

1888† Sinclair, William Japp, M.D. Aber., Honorary Physician to the Southern Hospital for Women and Children and Maternity Hospital, Manchester; and Professor of Obstetrics and Gynæcology, Owens College, Manchester; 250, Oxford road, Manchester.

Elected

1879 Slight, George, M.D., 14, Old Burlington street, W.

1881† Sloan, Archibald, M.B., 272, Bath street west, Glasgow.

1876† Sloan, Samuel, M.D., C.M., 5, Somerset place, Sauchiehall street west, Glasgow.

1890† Sloman, Frederick, 18, Montpellier road, Brighton.

1861 Slyman, William Daniel, 26, Caversham road, Kentish Town, N.W. *Council*, 1881.

1867* Smith, Heywood, M.D., 18, Harley street, Cavendish square, W. *Council*, 1872-5. *Board Exam. Midwives*, 1874-6. *Trans.* 6.

1888† Smith, Howard Lyon, L.R.C.P.Lond., Buckland House, Buckland Newton, near Dorchester.

1894 Smith, Hugh Roubiliac, M.B.Lond., 7, Gordon street, Gordon square, W.C.

1875 Smith, Richard Thomas, M.D., Physician to the Hospital for Women, Soho square; 53, Haverstock hill, N.W.

1886† Smith, Samuel Parsons, L.K.Q.C.P.I., Park Hyrst, Addiscombe road, Croydon.

1882† Smith, Stephen Maberly, L.R.C.P. Ed., Keerie Kara, Ryrie Street, Geelong, Melbourne. [Per Henry M. Smith, Ellerslie, Eltham.]

1879† Smith, Walter Hugh Montgomery, L.R.C.P.Ed., 47, London road, West Croydon.

1868* Spaull, Barnard E., 1, Stanwick road, West Kensington, W.

1888* Spencer, Herbert R., M.D., B.S.Lond., Professor of Midwifery in University College, London, and Obstetric Physician to University College Hospital; 10, Mansfield street, Cavendish square, W. *Council*, 1890-92. *Trans.* 2.

1876† Spencer, Lionel Dixon, M.D., Brigade-Surgeon, I.M.S., Bengal Establishment [care of Messrs. Grindlay and Co., 55, Parliament street, S.W.].

1882 Spooner, Frederick Henry, M.D., Maitland Lodge, Maitland place, Clapton, N.E.

Elected

1876† Spurgin, Herbert Branwhite, 82, Abington street, Northampton.

1893 Stack, E. H. Edwards, M.B., B.C. Cantab., St. Bartholomew's Hospital, E.C.

1894† Steer, Adam William Thorburn, M.R.C.S., L.R.C.P. Eng., Trevear, Penzance.

1894 Stevens, Thomas George, M.D., B.S. Lond., 1, Newington green, N.

1884† Stevenson, Edmond Sinclair, F.R.C.S. Ed., Strathallan House, Rondebosch, Cape of Good Hope. *Trans.* 2.

1877† Stephenson, William, M.D., Professor of Midwifery, University of Aberdeen; 3, Rubislaw terrace, Aberdeen. *Council*, 1881-3. *Vice-Pres.*, 1887-9. *Trans.* 2.

1873† Stewart, James, M.D.

1875*†Stewart, William, F.R.C.P. Ed., 26, Lethbridge road, Southport.

1884† Stiven, Edward W. F., M.D., The Manor Lodge, Harrow-on-the-Hill.

1884 Stivens, Bertram H. Lyne, M.D.Brux., 11, Kensington gardens square, W.

1883 Stocks, Frederick, 421, Wandsworth road, S.W.

1894† Stote, William Atkinson, M.R.C.S., L.R.C.P. Lond., 1, Grove terrace, Leeds.

1866* Strange, William Heath, M.D., 2, Belsize avenue, Belsize park, N.W. *Council*, 1882-4.

1884 Sunderland, Septimus, M.D., 35, Bruton street, Berkeley square, W.

1886† Sutcliffe, Arthur Edwin, Chorlton Lodge, Stretford road, Manchester.

1883* Sutherland, Henry, M.A., M.D. Oxon., M.R.C.P., 6, Richmond terrace, Whitehall, S.W.

1888 Sutton, John Bland, F.R.C.S., 48, Queen Anne street, Cavendish square, W. *Council*, 1894-5. *Trans.* 1.

Elected

1894 Swallow, Allan James, M.B., B.S. Durh., 5, Mount Edgecumbe gardens, Clapham rise, S.W.

1893 Swan, Richard Jocelyn, Park House, 32, Camberwell new road, S.E.

1893 Swayne, Francis Griffiths, M.A., M.B., B.C.Cantab., 4, Belvedere road, Upper Norwood, S.E.

1859*†Swayne, Joseph Griffiths, M.D., Physician-Accoucheur to the Bristol General Hospital; Harewood House, 74, Pembroke road, Clifton, Bristol. *Council*, 1860-1, *Vice-Pres.* 1862-4. *Trans.* 9.

1892† Swayne, Walter Carless, M.B. Lond., 3, Leicester villas, St. Paul's road, Clifton.

1888* Sworn, Henry George, L.K.Q.C.P. & L.M., 5, Highbury crescent, N.

1883 Tait, Edward Sabine, M.D., 48, Highbury park, N. *Council*, 1892-4. *Trans.* 1.

1879 Tait, Edward W., 48, Highbury park, N. *Council*, 1886-7.

1871*†Tait, Lawson, F.R.C.S., Surgeon to the Birmingham and Midland Hospital for Women; 7, The Crescent, Birmingham. *Trans.* 15.

1880*†Takaki, Kanaheiro, F.R.C.S., 10, Nishi-Konyachō, Kiōbashika, Tokio, Japan. *Hon. Loc. Sec.*

1859 Tapson, Alfred Joseph, M.B. Lond., 36, Gloucester gardens, Westbourne terrace, W. *Council*, 1862-4. *Vice-Pres.* 1891.

1891 Targett, James Henry, M.B., M.S. Lond., F.R.C.S., 6, St. Thomas's street, S.E. *Council*, 1895.

1892 Tate, Walter William Hunt, M.B.Lond., 4, Queen Anne street, Cavendish square, W. *Council*, 1895.

1871 Tayler, Francis T., B.A. Lond., M.B., Claremont villa, 224, Lewisham High road, S.E.

1869† Taylor, John, Earl's Colne, Halstead, Essex.

1890*†Taylor, John William, F.R.C.S., 59, Bath street, Birmingham. *Trans.* 1.

Elected

1892 Taylor, William Bramley, 145, Denmark hill, S.E.

1885† Taylor, William Charles Everley, M.R.C.P. Edin., 34, Queen street, Scarborough.

1894† Tench, Montague, M.D. Brux., L.R.C.P. Lond., Great Dunmow, Essex.

1890† Thomas, Benjamin Wilfred, L.R.C.P. Lond., Welwyn.

1884 Thomas, George H. W.

1887† Thomas, William Edmund, L.R.C.P.Ed., 2, Station hill, Bridgend, Glamorganshire.

1882† Thomas, Hugh, The Grange, Coventry road, Birmingham.

1867*†Thompson, Joseph, L.R.C.P. Lond., 1, Oxford street, Nottingham. *Trans.* 1. *Hon. Loc. Sec.*

1878† Thomson, David, M.D., Park square, Luton, Bedfordshire.

1879 Thornton, J. Knowsley, M.B., C.M., Surgeon to the Samaritan Free Hospital for Women and Children, 49, Montagu square, W. *Council*, 1882-3. *Hon. Lib.* 1884-5. *Hon. Sec.* 1886. *Vice-Pres.* 1888, 1893. *Trans.* 6.

1873† Ticehurst, Charles Sage, Petersfield, Hants.

1866 Tilley, Samuel, 32, West Kensington gardens, W.

1887† Tinley, Thomas, M.D. Durh., Hildegard House, Whitby.

1879† Tivy, William James, F.R.C.S. Ed., 8, Lansdown place, Clifton, Bristol.

1872† Tolotschinoff, N., M.D., Charkoff, Russia.

1884 Travers, William, M.D., 2, Phillimore gardens, W.

1873† Trestrail, Henry Ernest, F.R.C.S. Ed., M.R.C P. Ed., 36, Westbourne gardens, Glasgow, W. *Trans.* 1.

1893 Trethowan, William, M.B., C.M. Aber., 56, Grosvenor street, W.

1886 Tuckett, Walter Reginald, Woodhouse Eaves, near Loughborough.

1865* Turner, John Sidney, Stanton House, 81, Anerley road, Upper Norwood, S.E. *Council*, 1893-4.

Elected

1891 Turner, Philip Dymock, M.D.Lond., 95, Cromwell road, S.W.

1881† Tuthill, Phineas Barrett, M.D., Station Hospital, Gibraltar.

1861 Tweed, John James, jun., F.R.C.S., 14, Upper Brook street, W.

1890 Tyrrell, Walter, L.R.C.P.Lond., 104, Cromwell road, S.W.

1893 Umney, William Francis, M.D.Lond., Heatherbell, 15, Crystal Palace park road, Sydenham, S.E.

1874 Venn, Albert John, M.D., Physician for the Diseases of Women, West London Hospital; 70A, Grosvenor street, W.

1873 Verley, Reginald Louis, F.R.C.P. Ed., 28B, Devonshire street, Portland place, W.

1892† Verrall, Thomas Jenner, L.R.C.P.Lond., 97, Montpellier road, Brighton.

1879† Wade, George Herbert, Ivy Lodge, Chislehurst, Kent. *Council*, 1892-3.

1894† Wagstaff, Frank Alex., L.R.C.P. Lond., The Square, Leighton Buzzard.

1860† Wales, Thomas Garneys, Downham Market, Norfolk.

1894 Walker, Thomas Alfred, L.R.C.P. Edin., Greville Lodge, Willesden park, N.W.

1866† Walker, Thomas James, M.D., Surgeon to the General Infirmary, Peterborough; 33, Westgate, Peterborough. *Council*, 1878-80. *Hon. Loc. Sec.*

1889 Wallace, Abraham, M.D. Edin., 64, Harley street, W.

1870 Wallace, Frederick, Foulden Lodge, Upper Clapton, N.E. *Council*, 1880-2.

1872*† Wallace, John, M.D., Assistant-Physician to the Liverpool Lying-in Hospital; 1, Gambier terrace, Liverpool. *Council*, 1883-5.

1883 Wallace, Richard Unthank, M.B., Cravenhurst, Craven park, Stamford hill, N.

Elected

1893† Walls, Willlam Kay, M.B. Lond., St. Mary's Hospital, Manchester.

1879* Walter, William, M.A., M.D., Surgeon to St. Mary's Hospital, Manchester; 20, St. John street, Manchester.

1867* Walters, James Hopkins, Surgeon to the Royal Berkshire Hospital; 15, Friar street, Reading, Berks. *Council*, 1884-6. *Trans.* 1. *Hon. Loc. Sec.*

1873† Walters, John, M.B., Church street, Reigate, Surrey.

1894 Ward, William Alfred, L.R.C.P. Lond., Middlesex Hospital, W.

1884† Watson, Percival Humble, L.R.C.P. Lond., 72, Jesmond road, Newcastle-on-Tyne.

1884† Waugh, Alexander, L.R.C.P. Lond., Midsomer-Norton, Bath.

O.F.† Webb, Harry Speakman, New place, Welwyn, Herts. *Council*, 1889-91. *Vice.-Pres.* 1892-4.

1893† Webb, James Ramsay, M.B., B.S.Melbourne, 82, St. Vincent place south, Albert park, Melbourne.

1894 Webb, John Curtis, B.A. Cantab., 14, Cranley place, S.W.

1886† Webber, William W., L.R.C.P. Ed., Crewkerne.

1893† Webster, Thomas James, Brynglâs, Merthyr Tydvil.

1887† Wells, Albert Primrose, M.A., L.R.C.P. & S., L.M. 16, Albemarle road, Beckenham.

1876† Wells, Frank, M.D., 178, Devonshire street, Boston, Massachusetts.

O.F. Wells, Sir T. Spencer, Bart., F.R.C.S., Surgeon in Ordinary to H.M.'s Household; Consulting Surgeon to the Samaritan Free Hospital for Women and Children; 3, Upper Grosvenor street, W. *Council*, 1859. *Vice-Pres.* 1868-70. *Trans.* 5. *Trustee.*

1886† West, Charles J., L.R.C.P. Lond., The Grove, Fulbeck, Grantham.

1888† Weston, Joseph Theophilus, M.D.Brux., Prome, Lower Burmah, India.

Elected

1886 Wharry, Robert, M.D. Aber., 6, Gordon square, W.C.

1890 Wheaton, Samuel W., M.D.Lond., Physician to the Royal Hospital for Children and Women; 52, The Chase, Clapham common, S.W.

1889† Whitcombe, Charles Henry, F.R.C.S. Edin., 281, Queen's road, Halifax.

1890 White, Charles Percival, M.A., M.B., B.C.Cantab., 144, Sloane street, S.W.

1890 White, Edwin Francis, F.R.C.S., Westlands, 280, Upper Richmond road, Putney, S.W.

1882 Wholey, Thomas, M.B. Durh., Winchester House, 50, Old Broad street, E.C.

1877 Wigmore, William, 131, Inverness terrace, Hyde park, W.

1879† Willans, William Blundell, F.R.C.P. Ed., Much Hadham, Herts.

1889† Williams, Arthur Henry, M.A., M.B., B.C. Cantab., 54, London road, St. Leonard's-on-Sea.

1887† Williams, Charles Robert, M.B., C.M. Ed., 15, Ivanhoe terrace, Ashby-de-la-Zouch.

1894† Williams, John D., M.D. Ed., B.Sc., 20, Windsor place, Cardiff.

1872 Williams, Sir John, Bart., M.D., F.R.C.P., Physician-Accoucheur to H.R.H. Princess Beatrice, Princess Henry of Battenberg; Consulting Obstetric Physician to University College Hospital; 63, Brook street, Grosvenor square, W. *Council*, 1875-6, 1892, 1894. *Hon. Sec.* 1877-9. *Vice-Pres.* 1880-2. *Board Exam. Midwives*, 1881-2; *Chairman*, 1884-6. *Pres.* 1887-8. *Trans.* 12.

1890 Williams, Reginald Muzio, M.D.Lond., 95, St. Mark's road, N. Kensington, W.

1881 Willis, Julian, M.R.C.P. Ed., 64, Sutherland avenue, Maida vale, W.

Elected

1860† Wilson, Robert James, F.R.C.P. Ed., 7, Warrior square, St. Leonard's-on-Sea, Sussex. *Hon. Loc. Sec. Vice-Pres.* 1878-80.

1892† Wilson, Thomas, M.D., B.S.Lond., F.R.C.S., Assistant Obstetric Physician at the General Hospital, Birmingham; 33, Paradise street, Birmingham.

1886† Winterbottom, Arthur Thomas, L.R.C.P. Ed., Lark hill, Swinton, Manchester.

1877 Wintle, Henry, M.B., Kingsdown, Church road, Forest hill, S.E.

1893 Wise, Robert, M.D.Edin., 5, Weston park, Crouch End, N.

1887† Withers, Robert, Stenteford Lodge, Spencer terrace, Lipson road, Plymouth.

1893 Woodroffe, John FitzHenry, M.D.Dubl., 48, Mildmay park, N.

1890 Wornum, George Porter, 6, College terrace, Belsize park, N.W.

1881† Worthington, George Finch Jennings, M.K.Q.C.P., Thorncliffe, Poole road, Bournemouth.

1876† Worts, Edwin, 6, Trinity street, Colchester.

1887† Wright, Charles James, Senior Surgeon to the Hospital for Women and Children, Leeds; Professor of Midwifery to the Yorkshire College; Lynton Villa, Virginia road, Leeds.

1888*† Wyatt-Smith, Frank, M.B., B.C.Cantab., British Hospital, Buenos Ayres.

1889 Wynter, Andrew Ellis, M.D., The Corner House, Beckenham.

1871 Yarrow, George Eugene, M.D., 26, Duncan terrace, Islington, N. *Council*, 1881-3.

1882*† Young, Charles Grove, M.D., New Amsterdam, Berbice, British Guiana.

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ADVERTISEMENT.

The Society is not as a body responsible for the facts and opinions which are advanced in the following papers and communications read, nor for those contained in the abstracts of the discussions which have occurred at the meetings during the Session.

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AGNES HANNAM,
Secretary and Librarian.

JANUARY 3RD, 1894.

G. ERNEST HERMAN, M.B., President, in the Chair.

Present—31 Fellows.

George C. Steele Perkins, M.B., C.M.Edin., was admitted a Fellow of the Society.

G. Gunnis Ferguson, M.B., C.M.Glas. (W. Hampstead); Frederick William Gordon, L.R.C.P.Lond. (Norwich); Thomas Herbert Morse, F.R.C.S. (Norwich); and Israel J. E. Renshaw, F.R.C.S.Edin. (Sale), were declared admitted.

The following gentlemen were elected Fellows of the Society:—John Campbell, M.A., M.D., M.Ch.Dubl., F.R.C.S. (Belfast); Charles Robert Mortimer Green, L.R.C.P.Lond. (Calcutta); Bruce Hamilton, L.R.C.P.Lond.; Alfred Featherstone Kellett, M.B., B.C.Cantab. (Lewisham Road, S.E.); Arnold W. W. Lea, M.D., B.S.Lond., F.R.C.S.; Henry Lawrence McKisack, M.D.Dubl. (Belfast); and Hugh R. Smith, M.B.Lond.

The President nominated Dr. Haig Brodie, Dr. Rivers Pollock, and Dr. W. W. Hunt Tate as Auditors of the accounts for 1893.

Report of Committee on Dr. Amand Routh's Specimen of Fibroma spontaneously enucleated, shown November 1st, 1893 ('Transactions,' vol. xxxv, p. 409).

The specimen consists of a part of the left broad ligament, with the corresponding Fallopian tube and round ligament. At the free end of the Fallopian tube there is a hard white globular body, about the size of a Tangerine orange. It is closely attached to the extremity of the Fallopian tube, some of whose fringes are adherent to the exterior of the tumour. The passage of the tube is in no way obstructed, for a bristle can be readily passed along it.

The surface of the tumour is smooth, dimpled in places, white and glistening. On section it is found to consist of two parts: an outer zone of white, densely fibroid material, measuring one third of an inch in thickness; and a central part, one inch in diameter, of a greyish-yellow colour. Closer examination shows a thin calcareous plate situated immediately beneath the outer zone and involving about half the circumference of the centre. Histologically the periphery of the growth is composed of almost homogeneous fibroid tissue, and the central part consists of looser and more cellular fibrous tissue mingled with patches of granular substance which represents degenerated blood-clot. The vessels in the softer portion of the tumour are filled with similar matter.

As regards the origin of the tumour it may possibly represent a subperitoneal fibroma of the uterus which has become detached; and we are of opinion that in the anatomy of the preparation there is nothing inconsistent with this view.

J. H. Targett.
W. S. A. Griffith.
Amand Routh.

UTERUS FROM A SEPTIC CASE.

By Charles Chepmell, M.D.

Dr. Chepmell showed the reproductive organs of a woman who died on the fifth day of her puerperium of puerperal peritonitis. The labour, which resulted in the birth of twins, was attended by an untrained nurse or midwife—who, three weeks previously, lost a case of the same kind. The specimen showed the gangrenous condition of an unrepaired perineal rupture, and of the fissured cervix. The placental sites were uninfected, and the tubes were only inflamed at the fimbriated extremities. The infection evidently did not spread along the mucous surfaces, but through the lymphatics directly from the infected spots.

HYPERTROPHIED NYMPHÆ AND CLITORIS.

By William Duncan, M.D.

A committee, consisting of Drs. Horrocks, Tate, and Duncan, was appointed to report on this specimen.

A MALFORMED HEART.

By R. J. Probyn-Williams, M.D.

The specimen, which as far as can be ascertained is unique, was removed from a child born at full term at the General Lying-in Hospital. From the time of its birth

the child was always of a bluish colour, occasionally becoming almost black and quite cold.

The apex was to the right of the sternum, but no murmur could be detected.

The child lived a fortnight in the hospital, gradually wasting, and died fourteen days after discharge.

On post-mortem examination the heart was found to consist of two ventricles with only one auricle.

Into the auricle opens a superior vena cava which is of large size, and there is only a trace of a septum at the upper and back part.

There is a pulmonary artery arising from the right ventricle, but it is not patent; and there is a well-developed ductus arteriosus arising from the aorta, which is normal.

The left pulmonary vein has apparently opened into the vena cava, and on the right side there is only a small loop with no opening.

HYDROCEPHALUS WITH SPINA BIFIDA.

By R. J. Probyn-Williams, M.D.

The specimen shown was extracted from a patient in the General Lying-in Hospital.

She had been in labour for six days when first seen, and the condition on examination was somewhat unusual.

The finger passed through the external os, which was fairly well dilated, and felt a soft, doughy swelling, round which the finger could be swept without discovering any hard parts.

After admission to the hospital, the patient was anæsthetised and another examination made.

The swelling which had been felt was then found to be about as large as an ordinary fœtal head at full term, and above it, three inches from the external os, was a tight

constriction—Bandl's ring,—and above this again the bones of the skull in the second cranial position.

The presenting part was perforated and the child extracted by means of the cephalotribe.

The following are the principal measurements of the head as distended with tow:—Bi-parietal diameter $5\frac{3}{4}$ inches; bi-temporal, 5 inches; fronto-occipital, $6\frac{1}{2}$ inches; mento-occipital, $7\frac{1}{2}$ inches; maximum vertico-mental, $7\frac{3}{4}$ inches; sub-occipito-bregmatic, 6 inches; sub-occipito-frontal, $5\frac{1}{2}$ inches; fronto-occipital circumference, 20 inches; sub-occipito-bregmatic, $18\frac{1}{2}$ inches; from ear to ear over the bregma, 14 inches.

UNRUPTURED TUBAL GESTATION.

By T. W. Eden, M.D.

Dr. Eden said that the specimen was from a case operated upon in the Chelsea Hospital for Women by Dr. Schacht on October 14th, 1893. The parts removed consisted of the left tube and ovary which were now shown. The distal half of the tube was distended to the size (in the fresh state) of a Tangerine orange, and its contents were fluctuating. The ovary was enlarged to the size of a pigeon's egg, and presented a ruptured cyst upon its surface containing some dark granular blood-clot. In order to preserve the relations of parts, the entire specimen was frozen, and the tube opened by a longitudinal incision. It contained in its outer half an oval laminated mass of blood-clot, but no trace was evident to the naked eye of fœtus or fœtal appendages. The inner half of the tube, which was unoccupied by blood-clot, was dilated without thickening of the walls, and contained a clear fluid. The uterine ostium was patent; the abdominal ostium was occluded and all traces of the fimbriæ had disappeared. On

microscopic examination of portions of the blood-clot taken from different parts, structures were found which he believed to be undoubted chorionic villi. They were very well represented in the drawings which had been executed by Dr. Giles. They were definite structures, quite distinct from the surrounding blood-clot, consisting of nucleated cells and a little delicate fibrous tissue; there were no vessels visible in them. The surface layer of cubical epithelium could be distinctly made out in nearly every instance, but the cell outlines were obscured by the deposition upon them of a layer of fibrin, as well as by degenerative changes.

From the clinical history, the gestation could not be further advanced than ten to eleven weeks. Dr. Eden's view was that the ovum had perished considerably earlier than that by hæmorrhage into its substance, very probably repeated hæmorrhage. The fœtus and fœtal appendages had been entirely absorbed, with the exception of the chorionic villi, and they had undergone considerable degeneration. It was interesting to notice that the entire tube was dilated ; in tubal gestation the part occupied by the ovum was usually not much dilated, and the question arose whether this tube could have been the seat of salpingitic dilatation before the fertilisation of the ovum.

The case was important inasmuch as specimens of unruptured tubal gestation were very rare, there being only three or four previously recorded cases.

Dr. William Duncan thought the case very interesting, and although chorionic villi were shown under the microscope, thus proving the accuracy of the diagnosis, he hoped the President would appoint a sub-committee to report on the specimen. He asked Dr. Eden what were the symptoms which caused abdominal section to be performed in the case of a tubal gestation where the fœtus was thought to be dead.

Mr. Alban Doran observed that Dr. Eden's case was very similar to one in his own experience, a "Case of Tubal Abortion," reported in the 'British Medical Journal,' vol. ii, 1891. In both cases structures like chorionic villi were found in the clot. Care must be taken not to mistake fibrinous deposits for

villi. In hæmorrhage into the tube occurring in the early stages of tubal gestation, the ostium was usually not only open but dilated; yet it was easy to understand that the ostium might become closed under similar circumstances.

Mr. Bland Sutton had no doubt that the body in the tube was a tubal mole; had there been a doubt the sections exhibited under the microscopes would completely dispel it, for among the clot there were many typical chorionic villi in transverse section. The fact that the abdominal ostium was occluded had an interest for him, as he had come to the conclusion, from an examination of many specimens, that it required from eight to ten weeks after impregnation to effect this closure; the clinical facts of this case supported his conclusion. Mr. Sutton considered that the removal of such a gravid tube was correct practice.

Mr. Doran added that it was important to remember that Mr. Sutton and himself had to a great extent verified their researches by examining clot in tubes where a minute fœtus was actually found. The chorionic villi were very distinct in sections from these cases, and formed a reliable standard of comparison.

Dr. Schacht said that the history was briefly as follows:—Patient aged 29; married five years, never pregnant; catamenia regular, never missed; last period three and a half weeks ago, duration four days, quantity normal; ten days before coming to the Chelsea Hospital there was a slight show which lasted some days. The day after the appearance of this show there was sudden pain in the morning in the left inguinal region, lasting two hours. The second attack of pain occurred four days later while in bed. The third attack of pain, three days later (the day before coming to the hospital), it came on while washing; this was more acute than the others, and lasted one and a half hours. Examination showed her to be losing slightly; the uterus was normal in size; the cervix somewhat softened, while to the left of the uterus was an apparently enlarged and tender tube. Temperature 100°. She was admitted at once. With rest in bed the patient went comfortably through what appeared a normal period, and as the tube became much less tender she was allowed to go home on condition that she remained in bed. About two months from the date of first being seen, she had another bout of sharp pain, preceded by a profuse period which came at the proper time. On examination the mass appeared distinctly larger, about the size of a Tangerine orange, with a pulsating vessel plainly to be felt along the lower border. She was re-admitted and operated on without delay. The main points in diagnosis were—(1) irregular loss though no history of decidua; (2) recurring bouts of sharp pain in the left iliac region; (3) presence of tube dilated, probably with blood; and (4) a pulsating vessel. The pathological condition had been carefully described by

Dr. Eden, and he (Dr. Schacht) would of course be very pleased to have the report of such a committee as had been proposed on the specimen.

The PRESIDENT thought there could be no doubt that Dr. Eden's specimen was a tubal gestation. The specimen of unruptured tubal pregnancy which he (the President) had removed and described, and to which Mr. Bland Sutton had referred, differed from Dr. Eden's. In it blood was effused in the chorion outside the amnion, and the amniotic cavity contained a fœtus. The patient's symptoms were trifling, and the operation was done, not to relieve symptoms, but because the diagnosis of extra-uterine pregnancy had been made. It was not possible to ascertain whether the pregnancy was going on, or whether death of the fœtus had occurred, except by waiting and watching, which delay, if the pregnancy was going on, would put the patient in peril of rupture and intra-peritoneal hæmorrhage. To avert this danger the operation was done. Similar considerations, he thought, entirely justified Dr. Schacht in operating on his patient.

A Committee, consisting of Mr. Bland Sutton, Mr. Alban Doran, and Dr. Eden, was appointed to report on this specimen.

SIX MORE CASES OF PREGNANCY AND LABOUR WITH BRIGHT'S DISEASE.

By G. Ernest Herman, M.B.Lond., F.R.C.P.,

OBSTETRIC PHYSICIAN TO THE LONDON HOSPITAL, ETC.; PRESIDENT OF THE SOCIETY.

(Received November 15th, 1893.)

(*Abstract.*)

Case 1. Third pregnancy. Eclampsia with second labour, and persistent subsequent albuminuria. Third pregnancy beginning eleven months afterwards. Œdema and short breath coming on in second month of pregnancy, Arterial degeneration. Cardiac hypertrophy. Old retinitis. Urine containing one third albumen and casts. Premature delivery at end of fifth month. No fits. Slight diuresis following delivery. No marked diminution in albumen immediately following delivery, but some diminution following prolonged rest. Percentage of urea much, and absolute quantity of urea somewhat, below the average. No marked alteration in urea percentage accompanying delivery. Death six months afterwards.

Case 2. Tenth pregnancy. Ill twelve months before delivery. Urine containing half albumen. Polyuria. Deficient urea elimination. Bronchitis. No retinitis. Labour induced in ninth month. Death of child on delivery. Persistence of bronchitis. Diarrhœa. Increased urea excretion and diminution of albuminuria following delivery. Irregular slight pyrexia. Death a month afterwards. Chronic tubal nephritis.

Case 3. Fifth pregnancy. Bone disease followed by amputation of thigh eleven years previously. Œdema dating from fourth labour, four years previously. No other symptoms.

Anæmia. No retinitis. Polyuria. Urine containing half albumen, almost entirely serum-albumen. Slight diminution of albumen under milk diet. Urea excretion only slightly below normal. Labour induced at eight months. Child living. Diuresis, increase of urea elimination, and still greater diminution of albuminuria following delivery. Good health two years afterwards, in spite of persistent albuminuria.

Case 4. First pregnancy. Symptoms beginning towards end of seventh month. No retinitis. Urine containing two thirds albumen and casts. Labour induced at end of eighth month. Increase of albuminuria during labour. Progressive diminution during lying-in. Slight deficiency of urea elimination. Slight polyuria before delivery. Diuresis following delivery. Child living. Piece of placenta retained, and removed on the ninth day. Good health eleven months afterwards.

Case 5. Second pregnancy. Symptoms three weeks before term. Vomiting. Diarrhœa. Œdema. Labour at term. Lingering first stage accelerated by bougie. Child living. Urine containing casts, and a quarter albumen. Increase of albuminuria to one half during labour. Diuresis after delivery. Diminution of albuminuria during lying-in. Slight diminution in urea excretion. Good health and freedom from albuminuria six months afterwards.

Case 6. First pregnancy. Symptoms a week before admission. Œdema. Weakness; short breath. Cardiac hypertrophy. Urine containing one third albumen. Labour induced at end of eighth month. Child living; no fits. Slight deficiency of urea elimination. Diuresis, increased urea elimination, and diminution of albuminuria following delivery. Good health a year and eight months afterwards.

The author compares these cases with others reported in former communications by him to the Society, in all eleven in number, and then compares these eleven cases with twelve cases of puerperal eclampsia, also published by him in the Society's 'Transactions.' He draws the following general conclusion :— There are at least two kinds of renal disease to which a pregnant woman is specially liable. One of these is a very acute

disease, in which premonitory symptoms are either absent or of duration measurable by hours or days. It attacks chiefly primigravidæ. It often causes intra-uterine death of the child. It is attended with extreme diminution of the quantity of urine, and the small quantity of urine that is passed is greatly deficient in urea, but contains enough albumen to make it solid on boiling. This disease is accompanied with rapidly recurring fits. If it run a favourable course, the fits cease, then the urine increases in amount, and the percentage of urea in it rises. If the excretion of urea be not re-established, the case quickly ends fatally. Such cases seldom, if ever, pass into chronic Bright's disease.

The other is a disease which attacks older subjects, chiefly those who have had children before. Its premonitory symptoms extend over a period measurable by weeks or months. It often leads to intra-uterine death of the child. It is accompanied generally by increase in the quantity of urine, with copious loss of albumen, but not so much in proportion to the urine as in the more acute disease, and with diminution in the elimination of urea, but not nearly so great a diminution as in the more acute disease. Delivery is followed by temporarily increased diuresis and increase in the urea elimination. When this increase is considerable, the albuminuria usually diminishes and disappears, and the patient gets well. When the increase is only slight the albuminuria persists, and the case becomes one of chronic Bright's disease. This form of disease is sometimes attended with fits, but generally not. The presence of albuminuric retinitis affects the prognosis unfavourably. When the pressure within the abdomen is greater than usual, the amount of urine may be diminished, but in such cases the diuresis and the augmentation of the urea elimination after delivery are proportionately greater.

In the acute disease which causes eclampsia, and in the chronic disease when it is associated with excessive intra-abdominal pressure, much of the albumen is paraglobulin. The cases in which the albumen is mainly serum-albumen generally either die or pass into chronic Bright's disease.

In former communications (vols. xxxii and xxxiii) I have put before the Society cases of albuminuria compli-

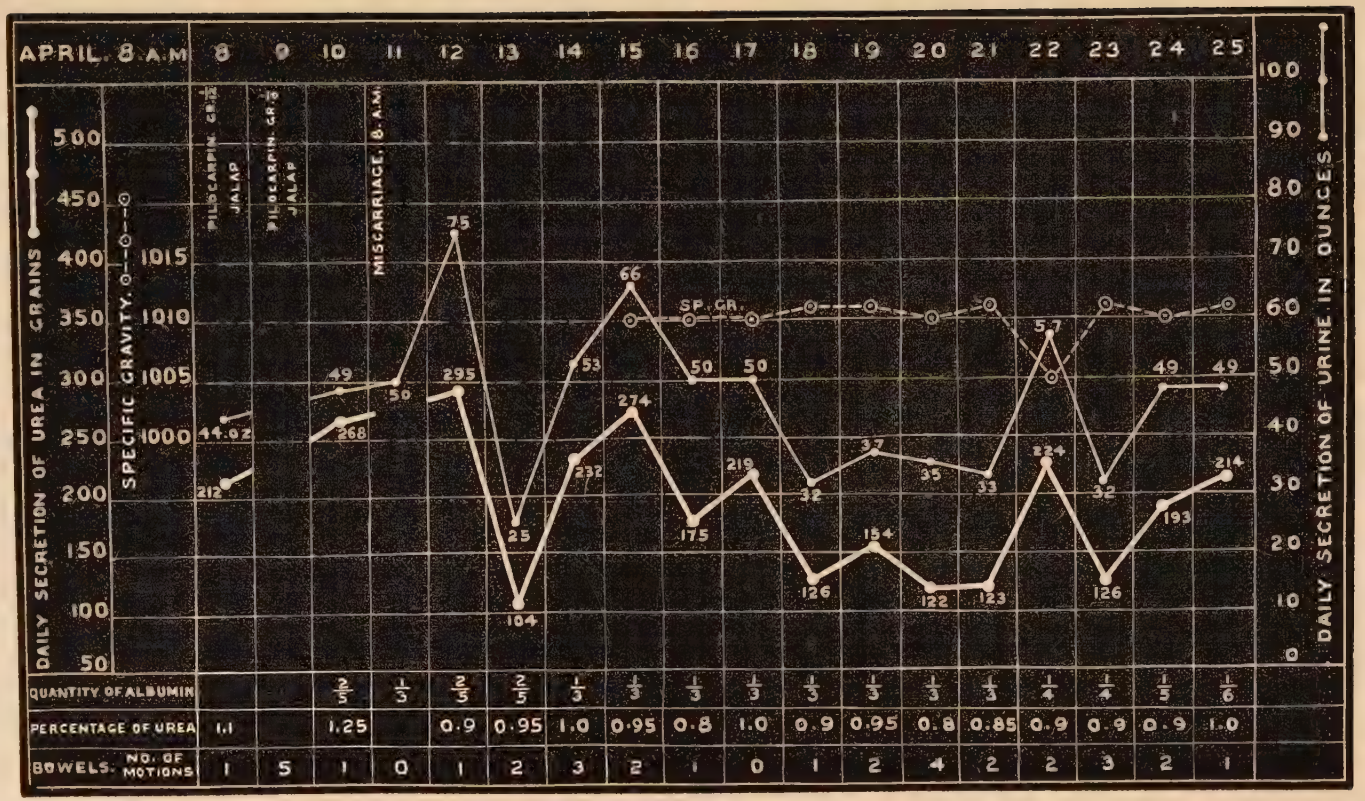
cating pregnancy, with and without eclampsia, in which the character of the urine had been observed with especial care. In the present paper I relate some further cases of the same kind.

Case 1. *Third pregnancy; eclampsia with second labour and persistent subsequent albuminuria; pregnancy eleven months afterwards. Œdema and short breath coming on in second month of pregnancy; arterial degeneration; cardiac hypertrophy; old retinitis; urine containing one-third albumen and casts; premature delivery at end of fifth month; no fits; slight diuresis following delivery; no marked diminution in albumin immediately following delivery, but some diminution following prolonged rest; percentage of urea much, and absolute quantity of urea somewhat, below the average; no marked alteration in urea percentage accompanying delivery; death six months afterwards.*—C. K— was delivered of a dead child in January, 1889, labour being attended with eclampsia. Her case is reported in the 'Transactions,' vol. xxxii, p. 26.

She was again admitted into the London Hospital, April 7th, 1890 (for the notes on this occasion I am indebted to Dr. A. B. Roxburgh, Resident Accoucheur, and Mr. W. H. Sturge, clinical clerk). Patient menstruated three months after leaving the hospital, and continued to do so regularly until five months ago, the flow being rather less copious than formerly. For the last five months has seen nothing. During the last four months has felt "ill in herself;" has suffered from swelling of the face and legs, the latter mostly in the evening. For three weeks has had a pain in the back and belly, worse at night and when lying down, and also difficulty in breathing.

On admission, the uterus presented the characters of five months' pregnancy. Slight œdema of legs. Arteries hard. Aortic second sound accentuated. Heart's apex-beat outside nipple line. No abnormal signs in lungs. Old retinitis albuminurica, but no recent changes. Urine

Case 1.


APRIL. 8 A.M.
8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
PILOCARPIN. GR. 1/12 JALAP
PILOCARPIN. GR. 1/6 JALAP
MISCARRIAGE. 8 A.M.
SP. GR.
DAILY SECRETION OF UREA IN GRAINS
SPECIFIC GRAVITY.
DAILY SECRETION OF URINE IN OUNCES
QUANTITY OF ALBUMIN
PERCENTAGE OF UREA
BOWELS. NO. OF MOTIONS

smoky, containing one-third albumen, deposits of blood-corpuscles, epithelium and granular casts.

April 11th.—During yesterday patient had severe pain in the lower belly and loins. In the evening six leeches were applied to the loins, and this was followed by relief from the pain. Shortly before midnight the patient felt something give way, and there was a watery discharge from the vagina. At 7 a.m. this morning a female fœtus, measuring ten inches long and weighing 10 ounces, was expelled with its placenta and membranes. The placenta weighed 3 ounces. Evening temperature 101°.

Patient recovered from the abortion without unusual hæmorrhage. Temperature was normal on April 14th and afterwards. In other respects her condition continued much the same as on admission. She left the hospital on April 30th. During her stay in hospital she had no fit, nor anything like the premonitory symptoms of a fit. Her weight while in hospital decreased from 7 st. 8 lbs. to 7st. I have no record of her weight at the time of the labour.

January, 1891.—I learn from the patient's friends that she died in October, 1890.

Urine : Quantity.—The quantity of urine was less above the average than during childbed sixteen months previously. Then the average daily excretion was 58½ ounces. On the present occasion the daily average was 46 ounces. Both these averages are exclusive of what was unavoidably lost with the stools. On the day following the miscarriage there was diuresis, as there was on the second day following the delivery. This diuresis was only temporary, and was followed, after labour and after delivery, by a fall, and then a rise again to about the average. After labour, the rise in quantity was slower and greater, and the subsequent drop also greater and more prolonged, than after the miscarriage.

Specific gravity.—I unfortunately have no record of this till April 15th. From that date onwards it only varied between 1010 and 1012, except on April 22nd (eleventh

day of lying-in), when it sank to 1005. On this day there was increased diuresis.

Albumen.—When the patient was discharged from the hospital after her confinement, the urine contained from one-fourth to one-third its bulk of albumen. On admission, before the miscarriage, the albumen was from two-fifths to one-third. This remained about the same until the eleventh day of the lying-in, when it sank, first to one-fourth, then to one-fifth, then to one-sixth.

Deposit.—The urine throughout gave a deposit of pus and granular casts, with some blood when first admitted.

Urea.—The percentage of urea roughly corresponded to what would have been expected from the specific gravity of the urine, and therefore the fluctuations of the urea excretion show a general correspondence to those of the quantity of urine. It averaged 191 grains *per diem.* On the occasion of the delivery of a child it averaged throughout 265 grains *per diem.* Both these quantities are exclusive of what was lost with the stools.

Sugar.—The urine never contained sugar.

Reaction.—The urine was acid throughout.

This case is interesting, first, as being a complete history of a case of Bright's disease coming on in pregnancy. I have published another in the 'Transactions,' vols. xxix and xxx. The total duration of the illness in that case was eleven months; of this one two years.

Secondly, compared with others, it helps to show the effect of abdominal distension on the renal function. I have put before the Society cases which tend to show that a diuresis following delivery is the rule; that when the distension is very great, the diuresis following its removal is greater than usual (see case, vol. xxxii, p. 327); that when the distension is less than usual, the diuresis is slight (see case, vol. xxxii, p. 335). In this case the abdominal distension was very slight, and the diuresis was scarcely appreciable.

Thirdly, that in this case, in which the renal disease persisted, and cardio-vascular changes developed, the urine

never presented the characters usual in the cases of sudden eclampsia which get well, viz., loaded with albumen, diminished in quantity, and of high specific gravity.

Case 2. *Tenth pregnancy; ill twelve months before delivery; urine containing one half albumen; polyuria; deficient urea elimination; bronchitis; no retinitis; labour induced in ninth month; death of child in delivery; persistence of bronchitis; diarrhœa; increased urea excretion and diminution of albuminuria following delivery; irregular slight pyrexia; death a month afterwards; chronic tubal nephritis.*—R. J—, æt. 32, admitted into the General Lying-in Hospital January 1st, 1890. (For the notes of the case and the analysis of the urine I am indebted to Mr. C. H. James, House Physician to the hospital.)

No previous illness except confinement. Never had scarlet fever nor rheumatic fever. First menstruated at fourteen, flow always scanty, usually lasting three days and irregular, the intervals varying from one to three months. Had always been temperate and had sufficient food. Was married at nineteen, and had had six children and three miscarriages; the last child in April, 1888; last miscarriage at three months—in April, 1889. All labours natural, excepting that the last was finished by forceps. The last menstruation ceased on January 20th, 1889.

Patient said that for twelve months she had been getting ill and weak. She often felt faint, and in the summer she twice fainted. Had had a cough throughout pregnancy. Some nausea in the early part of pregnancy, but no vomiting. For a month had suffered from sleeplessness. For about the same time micturition had been more frequent than before. Legs had swelled, and lower abdomen been puffy, for about three weeks. For two weeks she had been under medical care, keeping her bed and taking no solid food, although appetite was fair. During this time she had been passing more urine than usual, and it had been very high-coloured. Bowels regular.

On admission patient did not appear anæmic, but was thin and pale. There was much œdema of legs, labia, and abdominal wall. Fundus uteri reaching three-quarters of distance between umbilicus and ensiform cartilage. Greatest girth of abdomen 39½ inches. Fœtal head felt in left iliac fossa. Cervix uteri just admitting finger, but cervical canal not obliterated. Fœtal heart heard. Heart's apex-beat just within nipple line. Sounds normal at apex: at base first sound prolonged, second sound accentuated. Loud rhonchi heard over both lungs. No ophthalmoscopic changes. Urine containing half its bulk of albumen; blood, pus, and epithelium; hyaline and blood casts.

January 3rd.—Patient takes food well. Does not sleep well. No œdema of arms or face; no ascites. Impaired resonance over chest, feeble breath-sounds at most parts, loud rhonchi over right lung; absent breath-sounds and vocal fremitus at both bases.

4th.—11 a.m. a bougie was introduced (with antiseptic precautions).

5th.—Patient slept four hours last night, having been given a draught of chloral and potassium bromide. Patient more anæmic; œdema increasing; no pains. Bougie partly slipped out. At noon the smallest sized Barnes's bag was introduced.

6th.—After the introduction of Barnes's bag, patient had pains increasing in frequency and force till 5 a.m. this morning. Then they became less frequent, and patient slept. On examination later on, the bag was found to have been expelled into the vagina, and was removed. Vagina douched with 1 in 2000 sublimate solution, and the largest size Barnes's bag introduced into cervical canal. Patient complains of thirst, and is low spirited.

7th.—After introduction of largest Barnes's bag yesterday morning there were labour pains every ten or twelve minutes until between 2 and 3 p.m., when they ceased. On examination at 6 p.m. the bag was found expelled into the vagina, and was removed. A bougie was put into the

uterus and left there during the night, but did not produce uterine contractions. The rhonchi over the lungs have diminished; there is resonance over the bases behind, but the breath-sounds are still feeble. Œdema less. Fœtal heart heard. Breath slightly offensive.

8th (evening).—Complains of neuralgia in face. Had a draught of chloral and bromide last night; the same ordered for to-night. Four bougies, and the largest size Barnes' bag put into the uterus.

9th (morning).—No pains. Breath very offensive; some swelling below jaw on both sides.

1 p.m.—Labour pains began.

8 p.m.—Head presenting, and cord pulsating feebly in front of it.

10 p.m.—Os fully dilated. Patient put under chloroform, membranes ruptured, and podalic version performed, left foot being brought down, and subsequently the right. Some difficulty in extracting the head, owing to its having become extended. It was delivered with forceps at 10.30 p.m.

10.40 p.m.—Placenta expressed. About 10 ounces of blood lost. Intra-uterine hot sublimate (1 to 2000) douche given. Child stillborn. Attempts at resuscitation failed.

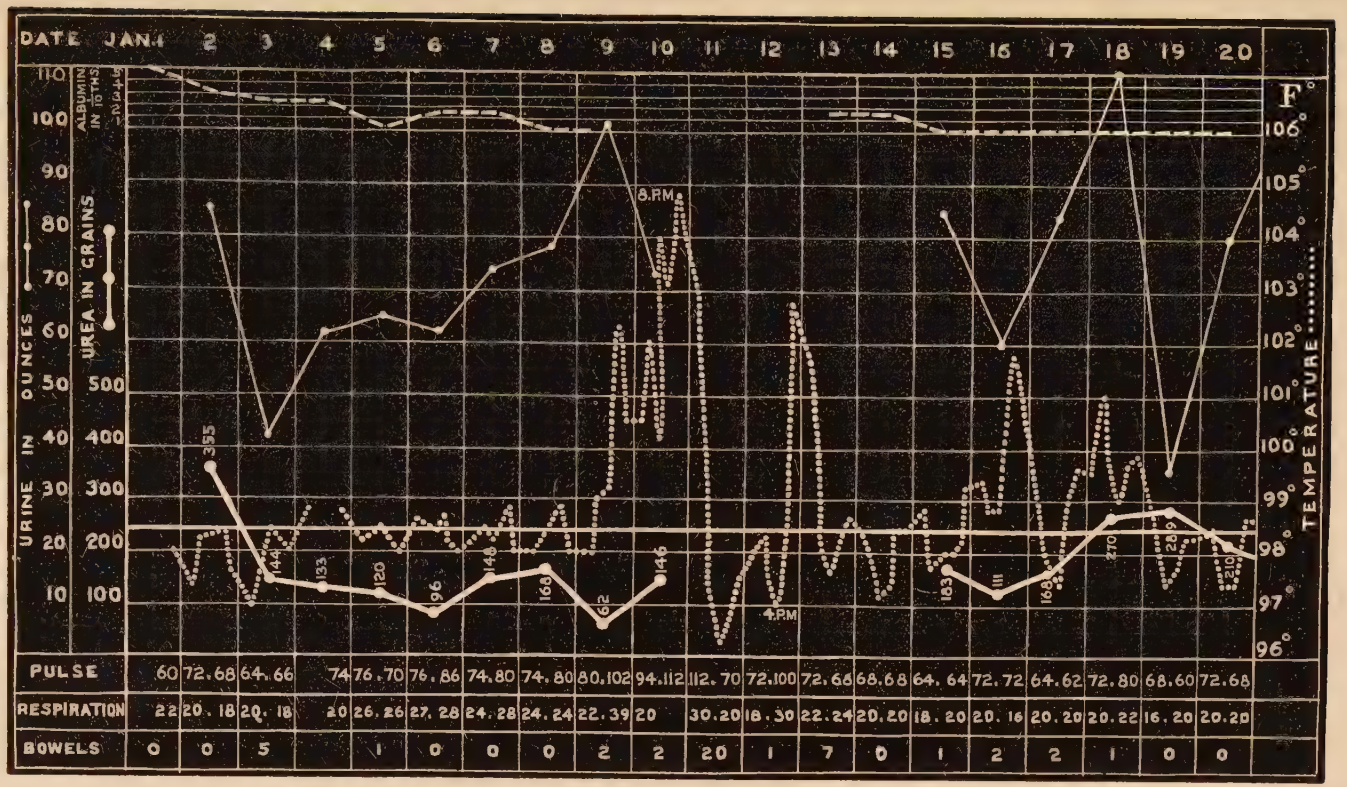
10th.—Bronchitis worse. Severe frontal headache. Breath very offensive.

11th.—Breathing has been very weak and shallow, and patient at times felt very faint, so that at times she thought she was sinking. Slight delirium between sleeping and waking; at other times mental condition clear. Slept well. Chest rubbed with Ol. Terebinth. and Ol. Olivæ, with marked relief to breathing.

12th.—Severe diarrhœa, with colic and tenesmus; stools watery. Tr. Opii ℥x given as enema. Cough better. Takes food well. Œdema of legs gone. No dulness over lung bases, nor diminution of breath-sounds. Ordered Tr. Ferri Perch. ℥xx, Spt. Chlorof. ℥xv, three times daily.

13th.—Diarrhœa nearly ceased. Taking food well. By

CASE 2.


DATE JAN. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
URINE IN OUNCES
UREA IN GRAINS
ALBUMIN IN TENTHS
TEMPERATURE F°
8.P.M.
4.P.M.
355
144
133
120
96
148
168
62
146
183
111
168
270
289
200
PULSE 60 72.68 64.66 74 76.70 76.86 74.80 74.80 80.102 94.112 112.70 72.100 72.66 68.68 64.64 72.72 64.62 72.80 68.60 72.68
RESPIRATION 22 20.18 20.18 20 26.26 27.28 24.28 24.24 22.39 20 30.20 18.30 22.24 20.20 18.20 20.16 20.20 20.22 16.20 20.20
BOWELS 0 0 5 1 0 0 0 2 2 20 1 7 0 1 2 2 1 0 0

abdominal examination both kidneys can be felt to be enlarged, but are not tender.

14th.—Patient cheerful and comfortable. Appetite good. Has slept well. No pain. Diarrhœa ceased. Fœtor of breath less. Submaxillary glands have been much swollen, and are still somewhat swollen. There has been no marked salivation. No œdema anywhere.

16th.—Fœtor of breath gone, but patient still complains of a metallic taste in mouth. Gums bleed easily. Bowels slightly loose, but no pain.

21st.—Patient allowed to sit up. No soreness of gums, but still metallic taste in mouth. Cough nearly gone. Ophthalmoscopic examination shows nothing abnormal.

23rd.—Urticaria on thighs. Yesterday there was pain in right calf. To-day there is also tenderness and fulness of the veins. No œdema. Leg put into cotton wool and bandaged.

25th.—Patient examined. Uterus quite moveable. Kidneys still enlarged.

28th.—Rigor, supposed to be due to fish not agreeing with her.

30th.—Patient discharged at her own wish. She is sallow, and thinner than she was on admission. No œdema. No bronchitis. Kidneys still large.

February 3rd.—Patient was admitted into the London Hospital.

9th.—She died. The autopsy showed both kidneys enlarged by chronic tubal nephritis.

Temperature.—On admission, and while anything was done to bring on labour, the temperature was normal. On the evening of the day following delivery the temperature rose to 104·8°, but the next day quickly fell to below normal. This was attributed to the bronchitis and bowel disturbance. On the evening of the fourth day of childbed there was another rise, reaching 102·8°. Fulness and pain in the breasts was believed to be its explanation. There was a rise to 101·8° on the eighth day, and to 101° on the ninth day; and after the thirteenth day there was

elevation of temperature in most evenings, without notable acceleration of pulse or changes in the patient's condition to account for them. I can only attribute them to the changes going on in the kidneys.

Urine: Quantity.—This was throughout above the average of health. An attack of diarrhœa which followed delivery unfortunately prevented the immediate effect of labour on the quantity of urine from being ascertained. The average daily amount of urine before delivery (taking the days on which all or nearly all the urine was collected) was 75 ounces. The average daily amount during the lying-in, beginning on the seventh day, was 83 ounces; but there were very great fluctuations, the daily amount ranging from 36 to 110 ounces. I am not able to identify any changes in the patient to explain these variations.

Urea.—The quantity of urea was estimated by Squibb's apparatus. It shows throughout an excretion below the average. During eight days preceding delivery it averaged 152·5° grains *per diem*. After delivery it was slightly increased, averaging between the seventh and thirteenth days of the lying-in 203·4 grains *per diem*. On the fifteenth day of the lying-in it suddenly shot up to 578 grains. I am not able to offer any explanation of this sudden increase. Mr. James tells me that he was under the impression at the time that it was due to the patient's taking proteids more freely; but although the diet prescribed for the patient is recorded, yet I have no notes as to what she actually ate, and therefore I cannot say whether this is so or not. It might be suggested that the former low quantities were due to a leak in the apparatus, allowing the escape of gas. But Mr. James tells me that he does not think the apparatus was defective in any way. If defective, it is surprising that the defect should have spontaneously corrected itself after a fortnight's use. Defective manipulation allowing gas to escape might account for low quantities. But I have entire confidence in Mr. James's care; and if error of this

kind did occur, it is surprising that it should have occurred with such regularity during a fortnight, and allowed the escape of nearly the same quantity of gas each time. I believe the records are correct, excepting that some urine was lost when the bowels acted.

Specific gravity.—This was 1015 on admission and the day following. During the rest of the patient's stay in hospital it only varied between 1008 and 1010, more often the former.

Albumen.—On admission the urine contained half its bulk of albumen. A week after admission, before delivery, it had sunk to a mere trace. On the fifth and sixth days of the lying-in it had slightly increased, amounting to one-eighth; then it sank again to a trace, and remained only this until the patient's discharge. The relative amounts of paraglobulin and serum-albumen were not ascertained.

Deposit.—On admission the urine gave a deposit of pus, epithelial cells, granular and hyaline casts. Six days after admission it was again examined microscopically, and found to contain blood-corpuscles in addition to the above elements.

Case 3. *Fifth pregnancy; bone disease, followed by amputation of thigh eleven years previously; œdema dating from fourth labour four years previously, but no other symptoms; anæmia; no retinitis; polyuria; urine containing half albumen, almost entirely serum-albumen; slight diminution of albumen under milk diet; urea excretion only slightly below normal; labour induced at eight months; child living; diuresis, increase of urea elimination, and still greater diminution of albuminuria following delivery; good health two years afterwards.*—Mrs. C—, æt. 38, married twenty years, admitted to General Lying-in Hospital January 5th, 1891.

Previous history (reported by Mr. H. B. Osburn, House Physician).—Had measles, not scarlet fever. Began to menstruate at sixteen; severe pain before marriage, which

ceased after marriage. In her twenty-seventh year her right leg was amputated for disease of the bone, which had been going on for two years, and after a previous excision had failed. She has also a scar on the right arm, which she says was left by an operation for the removal of some diseased bone there. She has had four children. There was an interval of nine years between first and second. The labours all easy except the last, which was tedious. The last confinement was four years ago. Patient got up as usual after this confinement, but noticed at this time slight œdema of feet and puffiness of face.

Her medical attendant considers that the renal disease dates from this time, and she comes here at his suggestion to see what had better be done in the present pregnancy. Patient last menstruated April 28th—May 3rd, 1890. Quickening was felt in August, 1890. Her health during the pregnancy has seemed very good. She had no morning sickness, but has had slight nausea on rising during the later months. She has had no headache, no loss of appetite, no pain, and no vaginal discharge. Her sight has been pretty good. During the last few weeks she has noticed herself becoming a little deaf.

On admission.—Patient is well developed and nourished, but her skin is, however, waxy in appearance, her face very puffy, and mucous membranes pale.

Chest.—Lungs resonant all over, nothing abnormal.

Heart.—Dulness normal, accentuation of second sound at base, soft systolic murmur at aortic area.

Abdomen.—A good deal of œdema in hypogastric region. On palpation fundus uteri felt $5\frac{3}{4}$ inches above umbilicus. Heart sounds two inches to right of and one inch above umbilicus; 140 per minute. There is some œdema of the stump of the right leg. The left leg and foot are slightly œdematous; no varicose veins.

Per vaginam, cervix almost obliterated, os quite patulous, admits two fingers; cranial presentation. No deformity of pelvis. Sacral promontory not felt. Some œdema of vulva.

Ophthalmoscopic examination.—There is some œdema of the retina, but nothing further detected.

January 11th.—Patient has now been five days on diet of Oiij milk *per diem*. The albuminuria is about the same. General condition unaltered.

At 12 noon a 1—1000 mercuric perchloride douche was given, and afterwards a bougie passed up the wall of uterus. There was a slight escape of liquor amnii.

12th.—No labour pains. A little liquor amnii has escaped.

15th, 12 noon.—No pains, second bougie put in; os size of a two-shilling piece, head plainly felt, slight show.

4 p.m., slight labour pains.

7 p.m., strong pains, and child born suddenly. Shortly before birth patient's temperature reached 101°, and she had a rigor.

The child was living, 20 inches long, and weighed 5 lbs. with 5 oz.

Patient was given fish on the sixth day, and meat diet a mixture containing iron on the ninth day.

She left the hospital on the fourteenth day for the London Hospital. She had then much improved; had more colour and less œdema. The urine then contained one-sixth albumen. The child was living, it had been hand-fed throughout, the mother never suckling it at all.

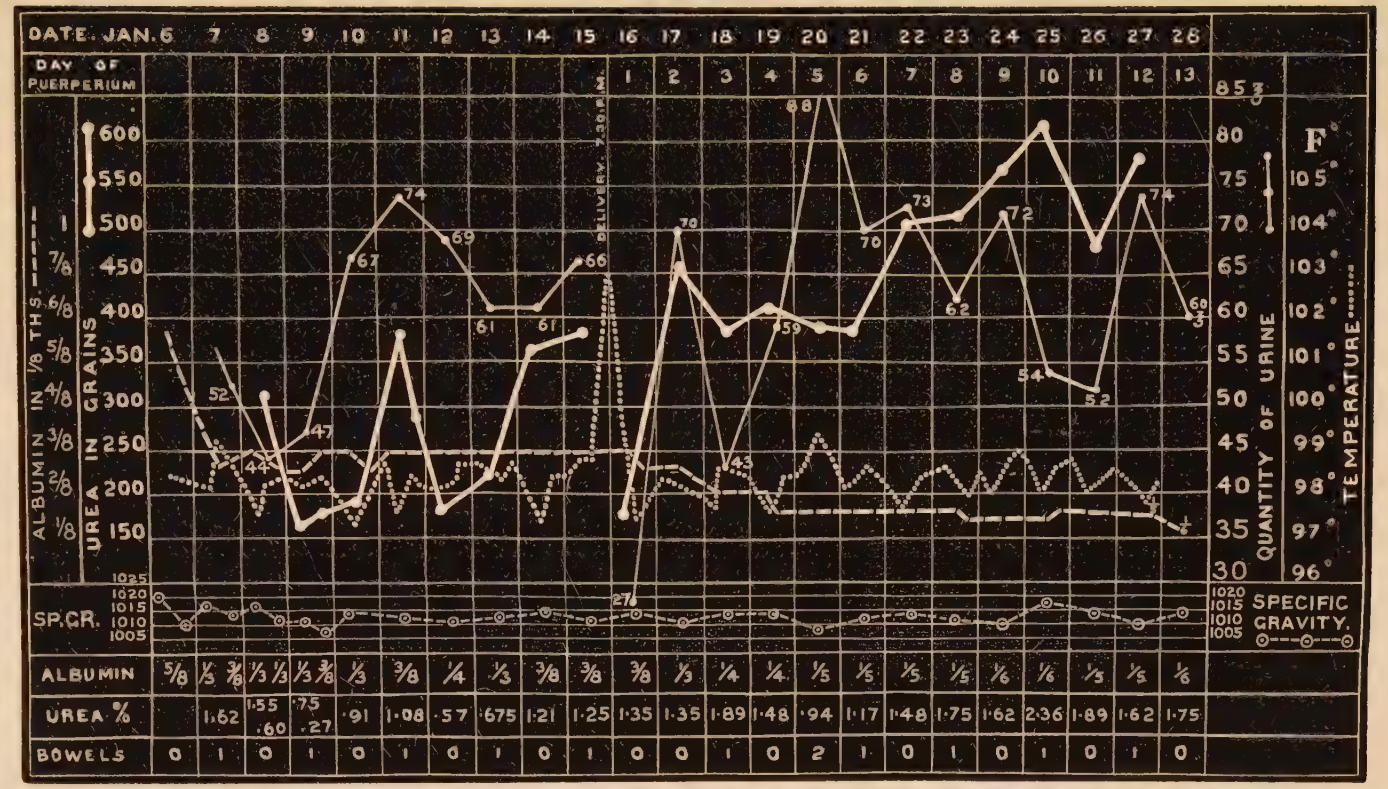
The patient was in the London Hospital under the care of Dr. Gilbart Smith until February 17th, 1891. When discharged the urine still contained one-sixth albumen. The amount of urine collected averaged 47 oz. *per diem*. The patient felt and thought herself well when she went out.

March 28th, 1892.—In answer to a letter of inquiry patient writes, "I am better at present than I have been during the five or six years I have suffered with kidney trouble. I am glad to say I got over the last confinement better than the one in March, 1887.

January, 1893.—Urine still contains half albumen.

Remarks.—Patient had no fits or any symptoms which

Case 3.


DATE. JAN. 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
DAY OF PUERPERIUM
1 2 3 4 5 6 7 8 9 10 11 12 13
DELIVERY
ALBUMIN IN 1/8 THS.
UREA IN GRAINS
QUANTITY OF URINE
TEMPERATURE
F
SP. GR.
SPECIFIC GRAVITY.
ALBUMIN
UREA %
BOWELS

suggested eclampsia, either before, during, or after labour.

Urine : Quantity.—The quantity of urine was throughout above the average. During the nine days before delivery the quantity collected averaged 60 oz. per day. During the thirteen days after delivery it averaged 62 oz. per day. Delivery appears to have been followed by diuresis, although this effect is not so marked as in other cases that I have published ; for on the fifth day the maximum amount collected on any day was reached, viz. 88 oz. On the second and on the fourth days of the lying-in, only 27 and 43 oz. respectively were collected. These small quantities may perhaps be accounted for by imperfect collection of the urine ; but I think not entirely, for the drop in the quantity of urine was accompanied by a rise in the specific gravity.

Albumen.—On admission it was five-eighths, but with rest in bed and milk diet it became three-eighths, steadily maintaining this quantity until delivery. After delivery it gradually decreased for three days, at the end of that time averaging about one-fifth, which it remained at, with small variations, until the patient's discharge. It was tested frequently for paraglobulin, but never more than a trace was found.

Urea.—In the week preceding delivery the average daily excretion of urea was 280 grs. ; it showed a slight rise during this time, although the diet was restricted to three pints of milk a day. It rose immediately after delivery, averaging then 420 grs. A further very marked rise was seen when fish and meat were substituted for milk diet, the excretion during those six days varying between 500 and 600 grs.

The urea was estimated with Squibb's apparatus, the correctness of which was checked by an experiment with healthy urine of a subject on a highly nitrogenous diet.

Temperature.—The only point calling for any remark is that at 6 p.m. on the day of delivery patient's temperature ran up to 101° with a slight rigor ; as bougies had been in for

several days septic absorption was feared. Two hours after labour the temperature rose to 103°; but it sank to subnormal in a few hours, and there was no further rise.

The highest temperature during the puerperium was 99·2°.

These two cases illustrate a point of minor importance, viz. the occasional uncertainty and slowness of the method of inducing premature labour here adopted, viz. the introduction of a bougie between the membranes and the uterine wall; and the first case shows that even Barnes' dilating bags cannot be relied on to provoke effective labour pains.

Case 4. *First pregnancy; symptoms beginning towards end of seventh month; no retinitis; urine containing two-thirds albumen and casts; labour induced at end of eighth month; increase of albuminuria during labour; progressive diminution during lying-in; no marked deficiency of urea elimination; slight polyuria before delivery; diuresis following delivery; child living; piece of placenta retained and removed on the ninth day; good health eleven months afterwards.*—(For the notes of this and the next case, and the analysis of the urine, I have to thank Dr. H. D. Levick, house physician to the hospital.) Mrs. M—, aged 28, admitted into the General Lying-in Hospital September 1st, 1891, under the care of Dr. Cullingworth, by whom my attention was called to this and the next case, and whom I have to thank for permission to publish them.

Previous history.—Never had scarlet fever. Commenced to menstruate at fifteen; was regular until she married, except that when nineteen she saw nothing for four months, and was paler than usual; has always been weakly. Married eleven months ago, last menstrual period ending on January 3rd, 1891. Suffered from morning sickness and dyspepsia during the first three months of pregnancy; after first three months was quite well until six weeks ago, when legs began to swell. Three

weeks ago noticed swelling of eyelids; one week before admission that of legs increased considerably and gave her pain. No headache nor sickness except after taking castor oil the night before admission. No nausea, no dizziness, no pain in chest, and no dimness of sight complained of before admission. Consulted a doctor on account of the excessive swelling of legs, who examined her urine, found a large quantity of albumen, and advised her to come to the hospital.

On admission.—Patient was very anæmic, but fairly well nourished. Heart's apex-beat half an inch outside nipple line in fifth intercostal space. Dulness commences above at lower border of third left costal cartilage; the dulness of the right side of the heart extends half an inch beyond left edge of sternum. Heart sounds normal, except for heaving and prolonged first sound. Arteries rather tense, slightly thickened. Lungs: nothing abnormal detected. Breasts small, nipples ill-developed and wanting in pigment. Abdomen: lower part œdematous; greatest girth 37 inches. Fœtus in first position. Fœtal heart heard to left and below umbilicus. Extreme œdema of feet, legs, and thighs, the right leg being more œdematous than the left one. Œdema of vulva not marked. Face œdematous, especially eyelids. Eyes: fundi, nothing abnormal detected. Urine contains two-thirds albumen; quantity passed stated to be less than that passed three months previously.

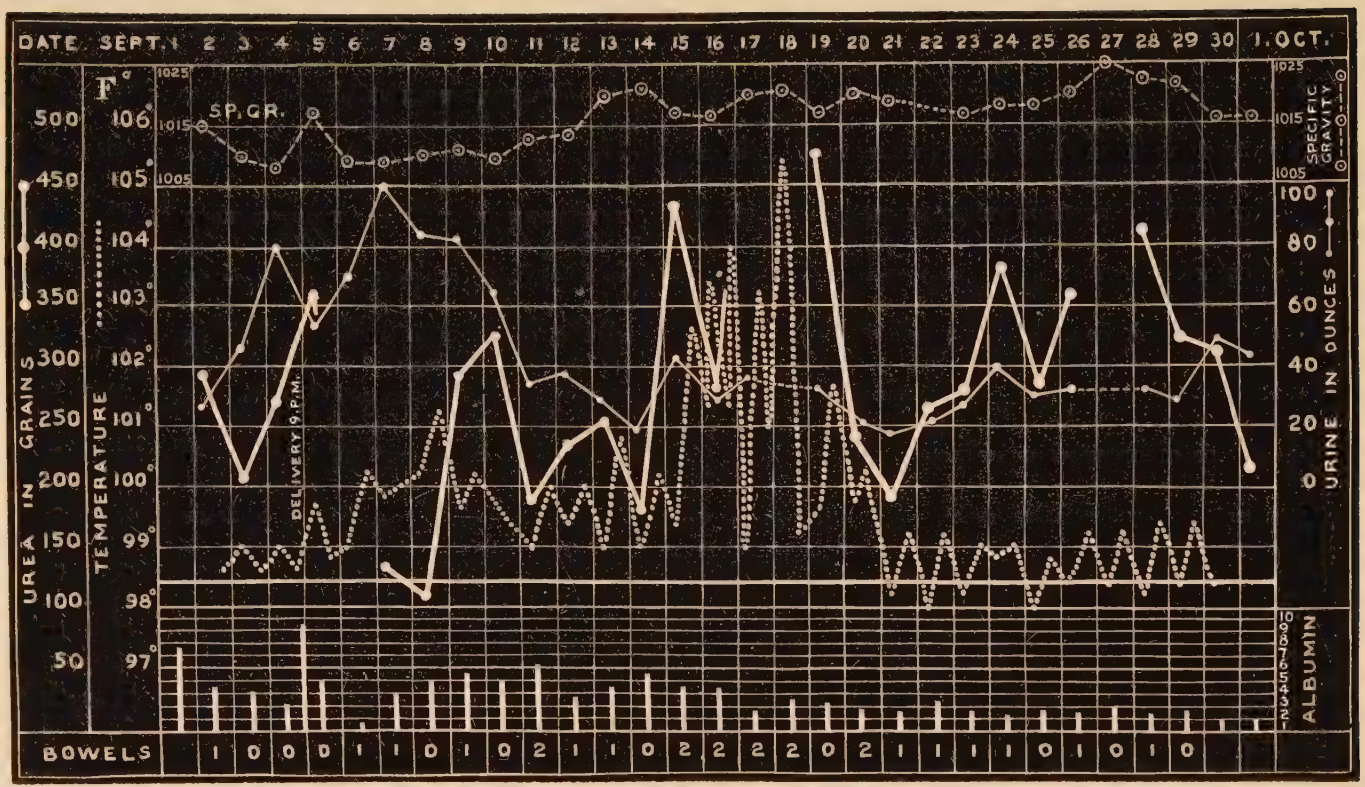
September 3rd, 8.30 p.m.—*Per vaginam*, vertex in cavity of pelvis, cervix thinned, admits one finger easily through internal os.

The membranes were separated for one inch round internal os. A bougie was then passed about 9 inches between uterine wall and membranes.

4th, 4 a.m.—Pains commenced; infrequent and irregular, described as aching.

6 a.m.—Regular pains every five minutes. 12 noon.—Pains every three minutes. Os admits two fingers; membranes bulge. Vomited four times this morning.

CASE 4.


DATE SEPT. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 1. OCT.
F°
SP. GR.
1025
1015
1005
SPECIFIC GRAVITY
UREA IN GRAINS
500
450
400
350
300
250
200
150
100
50
TEMPERATURE
106°
105°
104°
103°
102°
101°
100°
99°
98°
97°
DELIVERY 9. P.M.
URINE IN OUNCES
100
80
60
40
20
0
ALBUMIN
10
9
8
7
6
5
4
3
2
1
BOWELS
1 0 0 0 1 1 0 1 0 2 1 1 0 2 2 2 2 0 2 1 1 1 1 0 1 0 1 0

9 p.m.—Natural delivery. Child living, weight 4 lbs. 15 oz., male.

5th.—Slept well ; slight headache this morning. Œdema of legs decreased. Eyelids and face rather more swollen than yesterday morning, but not so much as on admission.

7th.—Unable to sleep last night until Pot. Brom. gr. xxi was administered. No headache. No vomiting.

9th.—Slight œdema of ankles only remaining. Many lineæ albicantes on right calf. A few on right thigh and left calf.

10th.—Complains of pain in right lumbar region. Right kidney can be easily felt between the hands. Œdema of ankles slight.

13th.—Last two days discharge offensive, thick, and brown. Uterine cavity explored, large mass of firmly adherent tissue found. Chloroform administered and mass removed. Mass was brought away as one large piece measuring 2 inches by $1\frac{1}{4}$ inches, a smaller piece 1 inch by $\frac{3}{4}$ inch, and several fragments. These pieces looked like placental tissue. A small part was slightly offensive. Intra-uterine douche. Temperature rose to 101·8° after manipulation.

14th.—Temp. 99·4°. Discharge not offensive.

15th, p.m.—Rise of temperature to 104°, accompanied by a rigor ; vomited once. Bowels were well open, and two and a half hours after rise of temperature and rigor, temperature had fallen to 101·8°. Pulse very weak, 156. Patient looks ill.

16th.—Temp. 103·6°. Chloroform was administered ; uterine cavity was explored again, and some clots, shreds, and hard masses of placental-like tissue were removed by exploring finger. Intra-uterine douche of Tr. Iodi ʒj ad Oj. at Temp. of 110° F. Vomited after the chloroform, looks very white and ill. Temperature rose to 104° after removal of tissue from cavity of uterus.

17th, p.m.—Temp. 99·2°. Pulse 112. Looks and feels much better. Slept well. Discharge not offensive, slight.

18th, a.m.—Temp. rose to 105·4° with a rigor. Tepid sponging. Intra-uterine douche of Tr. Iodi 3j ad Oj, 110° F. P.m., temp. 100°. Pulse 110. Some sleep. Patient has been taking nourishment well.

20th.—Temperature down to 99·4°. From this time the patient made a slow but uninterrupted recovery, and went out convalescent on October 1st.

Urine: Quantity.—Before delivery the amount of urine collected was slightly above what is usually regarded as the normal quantity; it averaged 52 oz. per day. After delivery there was diuresis, 70 oz. being collected on the second day, and the maximum, 100 oz., on the third day. Then the daily quantities of urine began to decrease, and after the first week the daily amount collected did not exceed the usual amount; it fluctuated between 20 and 40 oz.

Specific gravity.—This does not call for special remark. Its variations were, on the whole, inversely as the quantity.

Albumen.—The amount of albumen varied. The urine contained about two-fifths of its bulk of albumen when admitted. In the two days following admission it diminished under the influence of rest and milk diet. It reached its maximum, three-quarters, just before delivery—a change most easily accounted for by the increased abdominal pressure due to the straining with the pains. After delivery it fell to what it had been before, and during the lying-in it showed a further slight diminution, so that when the patient was discharged the urine only contained about one-tenth of albumen. I have no notes as to the relative amounts of paraglobulin and serum-albumen.

Urea.—The urine of each period of twenty-four hours was mixed together, and the percentage of urea in it estimated with Squibb's apparatus. The patient was instructed to allow the catheter to be passed when an action of the bowels was expected, and to save all urine that she passed at other times.

In spite of these precautions doubtless some urine escaped collection, and the quantities shown are therefore

incorrect in being below the true amount. On some days, from causes needless toparticularise, the collection or examination was known to be imperfect, and these days are omitted. The chart shows very wide variations between the amounts of urea eliminated on different days, the causes of which I cannot explain. I think that the figures are correct, because I have confidence in the carefulness with which Mr. Levick made them, and because similar variations have been observed in other cases. Taking them as a whole, the average was 279 grs. per day before delivery, and 280 grs. per day after delivery, until the time at which the patient began to take flesh food. The observations after the date of meat diet are not numerous enough to be worth averaging.

There was thus here no such diminution in the amount of urea as has been observed in eclampsia cases. Taking into consideration the patient's diet, the quantity can hardly be considered to have been at all below the normal.

Deposit.—Throughout the whole of the patient's stay in hospital granular casts were present as a deposit, together with urates, pus corpuscles, and once a little blood.

Reaction.—This was twice slightly alkaline, once neutral, on all other occasions acid.

March 30th, 1892.—Patient attended at the hospital. Feels and looks well except that she is anæmic. Has been taking iron since discharge. No œdema. Urine contains one-sixth albumen.

April 7th.—Dr. Ashton Warner (Kensington) writes that he has several times found no albumen.

August 9th.—Is five months pregnant; no albumen.

Case 5. *Second pregnancy; symptoms three weeks before admission; vomiting; diarrhœa; œdema; labour at term; lingering first stage accelerated by bougie; child living; urine containing casts and one-fourth albumen; increase of albuminuria to one-half during labour; diuresis after delivery; diminution of albuminuria during lying-in; no marked diminution in urea excretion; good health and*

freedom from albuminuria six months afterwards.—Mrs. J., æt. 23, admitted into the General Lying-in Hospital October 20th, 1891.

Never had scarlet fever or any illness except her first confinement, which was natural. Last menstruation ended December 25th, 1890, and fourteen days afterwards morning sickness commenced, and continued until she quickened, after which it occurred occasionally up to fourteen days before admission, when it became persistent, occurring five or six times a day; during last fourteen days two loose motions daily. During last three weeks has only passed about half her average quantity of urine.

On the 17th of October legs became swollen, more so than on admission.

On the morning of admission, after retching noticed for the first time that her eyelids were swollen. A doctor sent her to the General Lying-in Hospital. Urine one-third albumen.

21st.—Patient is pale, but fairly well nourished, with swelling of thighs, legs, abdomen, and face. Slept well last night, no labour pains since admission. Complains of pain over the eyes.

22nd.—Still pain over eyes, but has had some sleep. No vomiting. No labour pains. Bowels opened three times. Œdema of legs not so tense; right calf measures 15 inches, and left 13¾ inches; œdema of other parts about the same. Heart: impulse in nipple line in fifth space; dulness commences above the third costal cartilage on the right, extends 1 inch to right of left edge of sternum. First sound not clear, but no murmur. Radial pulse tense, but vessel wall not thick. Lungs: a few rhonchi over left lung. Slight cough two days.

23rd.—Severe headache. Vomited four times. Bowels not opened. Towards evening headache less, and patient slept. Some labour pains.

24th.—Waked up occasionally by pains. On two attempts to sit up, nausea followed by vomiting. No headache. Pains every fifteen minutes. Complained of

a sensation passing from abdomen over chest, taking her breath away; this occurred about every two hours yesterday afternoon. Eyelids and legs rather more swollen, right calf measuring 15½ inches, left one 14 inches. To have chloral, 15 gr., every six hours; p.m., bowels opened by enema.

25th.—Slept well, waked up during night with pains. This morning no headache, vomited once after chloral, no labour pains now. Os soft, ragged from old lacerations; size of a two-shilling piece. Since admission patient has been on full diet with beef-tea instead of meat.

26th.—Slept well. No labour pains; no vomiting; slight headache. Shooting pain in chest for fifteen minutes this morning. Œdema: right calf measures 15½ inches, left one 14½ inches. Os size of half-a-crown, soft and dilatable. Membranes separated with finger all round. Diagonal conjugates 4⅜ inches. Fœtus in first position. Fœtal heart heard.

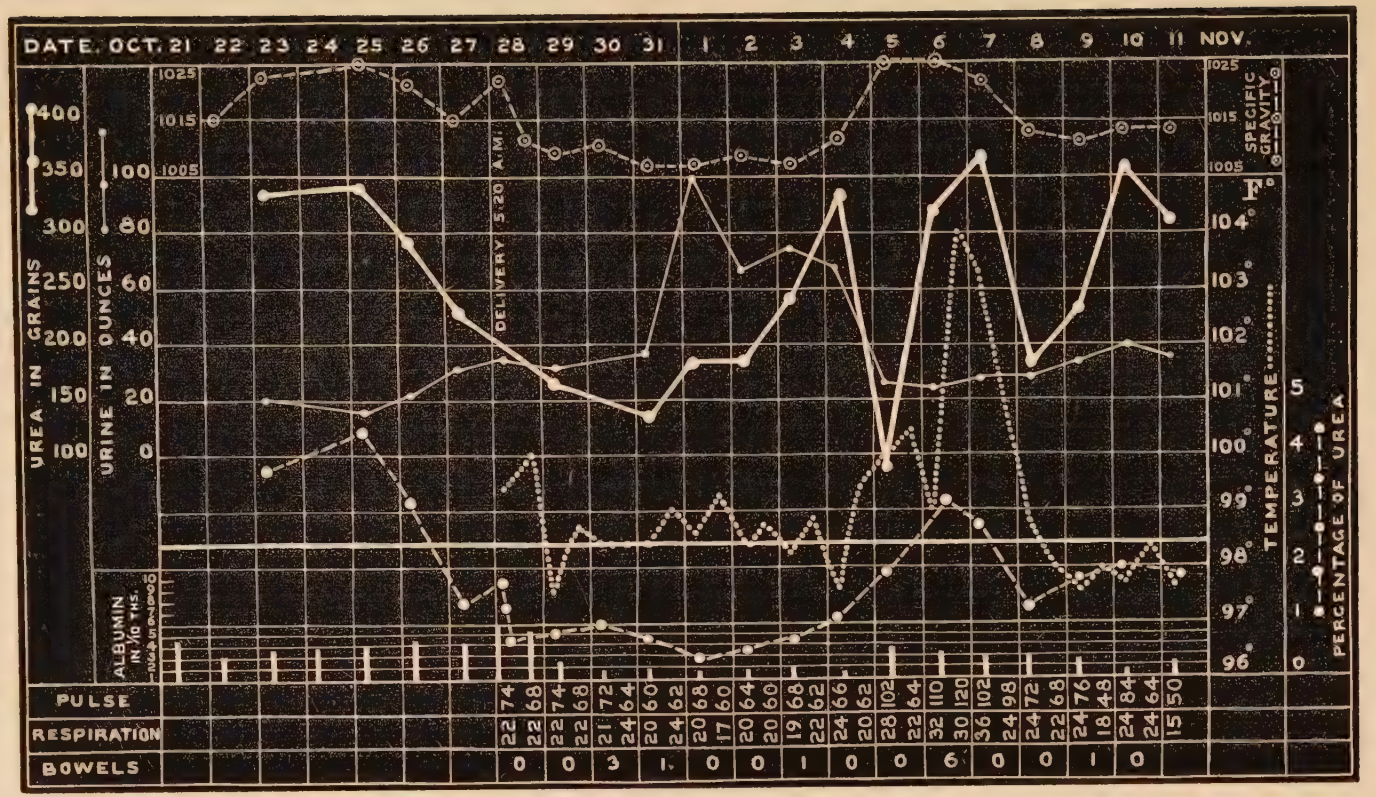
27th.—Slight pains during night, but a good night's sleep. Slight headache. Bowels open by enema. No vomiting, but nausea. Complains of a sensation, described as if a cord were dragged from abdomen through chest and neck into head. Since admission has never been able to sit up without feeling giddy. 11 a.m., flexible bougie passed up between uterine wall and membranes. 8 p.m., pains every twenty minutes. 12 midnight, os size of four-shilling piece; pains frequent.

28th, 3 a.m.—Pains became strong. 5.5 a.m., spontaneous rupture of membranes at full dilatation. 5.20 a.m., natural delivery of a living male child, 20½ inches long, and weighing 7 lbs.

29th.—Slept well; no vomiting; no headache; no diarrhœa. Œdema of legs less; right calf measures 15 inches, left one 13½ inches. Swelling of face about the same.

31st.—Œdema decreasing, right calf measures 13 inches, left one 12¼ inches.

Case 5.


DATE. OCT. 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 NOV.
UREA IN GRAINS
URINE IN OUNCES
SPECIFIC GRAVITY
TEMPERATURE
PERCENTAGE OF UREA
DELIVERY 5.20 A.M.
ALBUMIN IN 1/10 THS.
PULSE
RESPIRATION
BOWELS

November 1st.—Rhonchi over both lungs. To take following mixture :

Tr. Camph. Co., ℥xv.
Oxymel Scillæ, ℥xxx.
Infus. Cascarillæ, ℥j. 6tis horis.

2nd.—Œdema very slight. To have meat.

5th.—Vomited last night after cough medicine. During night temperature rose steadily, and to-day is 100·4°. No vomiting or nausea this morning. Bowels not opened for two days, last opened by house mixture and enema.

6th.—This morning Pil Rhei Co., gr. x, were given. This afternoon patient vomited twice. Bowels were opened five times. 6 p.m., splitting headache ; shivering.

7th.—No headache, vomiting, or diarrhœa.

8th.—To have chicken or chop.

11th.—Discharged free from œdema, vomiting, or diarrhœa.

25th.—Eyes examined ; brown patch on outer side of left optic disc. Vessels passing over it curved.

Urine.—The course of the urinary excretion bears a close resemblance to that observed in other cases that I have reported.

Quantity.—Before delivery somewhat less than the average of health, viz. 24½ ounces per day. After delivery diuresis, the maximum, 100 ounces, being reached on the fifth day. After this a drop to near the old rate, viz. between 20 and 40 ounces per day.

Albumen.—Before delivery the amount of albumen was about a quarter. It was increased to about half the bulk of the urine during labour, and within two days after delivery had become less than before labour. There was a temporary increase in the second week of the lying-in, but when the patient was discharged there was only about one-twentieth of albumen. The relative proportions of serum-albumen and paraglobulin were not ascertained.

Specific gravity.—Before labour the specific gravity was usually near 1020. During the diuresis after delivery

the specific gravity decreased, going down to as low as 1007, but it increased again as the quantity of urine became reduced.

Urea.—The curve showing the percentage of urea roughly corresponds in its elevations and depressions to that of the specific gravity of the urine. The absolute quantity of urea was, on admission, not far from the average of health, 335 grains per day. During the three days preceding delivery it fell, and continued to do so after delivery till the fourth day, when it began to rise. After this the curve shows great variations, which I cannot account for; but the average, after the fourth day, was 254·5 grains *per diem*. The variations are partly accounted for by diet. As I could only state from the notes what was ordered for the patient, and not what she took, no useful result would follow from a detailed consideration of the changes in diet and accompanying changes in the urine.

Deposit.—The urine throughout gave a deposit of granular casts, beside, after delivery, uric acid crystals, pus, and blood-corpuscles.

April 6th, 1892.—Patient attended at hospital. Is somewhat anæmic, but considers herself quite well. Urine contains no albumen.

Case 6. *First pregnancy; symptoms a week before admission; œdema, weakness, short breath, cardiac hypertrophy; urine containing one-third albumen; labour induced at eight months; child living; no fits; no great deficiency of urea elimination; diuresis, increased urea elimination, and diminution of albuminuria following delivery; good health a year and eight months afterwards.*—Mrs. B—, æt. 35, admitted into the General Lying-in Hospital December 8th, 1891, under the care of Dr. Cullingworth. For the notes of this case and the analysis of the urine I am indebted to Dr. A. E. Giles, House Physician to the hospital; and I have to thank

Dr. Cullingworth for permission to observe and publish the case.

Patient's mother and father died from dropsy; a sister and a brother died from Bright's disease. Patient had had measles and scarlet fever in childhood. At eighteen had rheumatic fever. Visited Egypt five years ago, and had attacks of low fever. First menstruated at seventeen, was regular but scanty till pregnancy. Last menstruated in March (exact date forgotten). During pregnancy had little sickness, but suffered much from constipation, thirst, and sleeplessness. For a week before admission had felt weak and "out of sorts," and been troubled with frequent micturition and with shortness of breath. The present was her first pregnancy.

On admission her legs were œdematous; she said her eyelids had been puffy. There was evidence of cardiac hypertrophy, and a marked thrill at the apex, but no murmur. There was no dilatation of the cervix. The size of the uterus corresponded to eight months' pregnancy.

December 10th.—Bougie introduced at 12.45 p.m. Pains began at 8 p.m. Vomited at 10 p.m., after which pains passed off, and next morning the bougie was found in the vagina. A douche of Condy's fluid was given twice daily after putting in the bougie.

11th.—9.30 p.m., ergot ʒss given. 11.30 p.m., ergot ʒss and chloral ϑj.

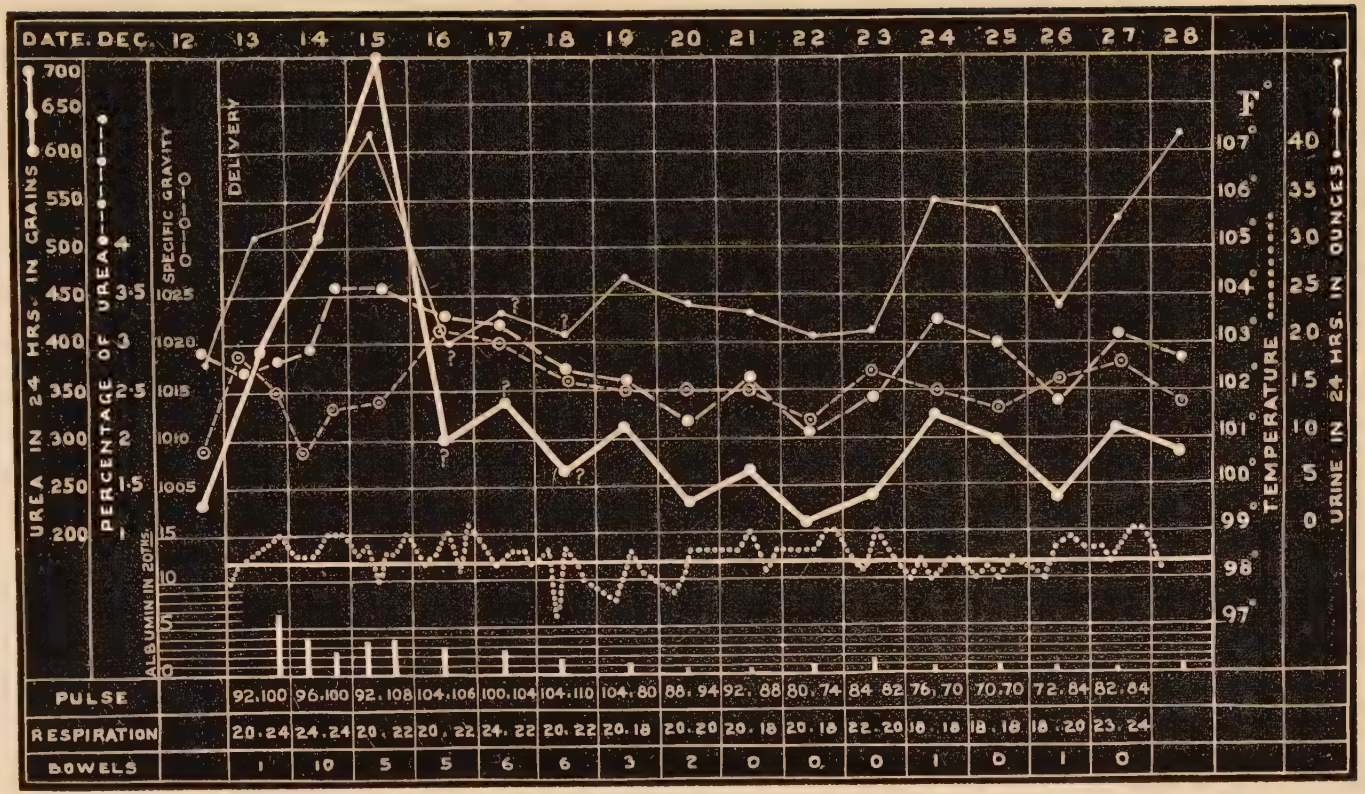
12th.—Soon after the douche the pains returned. As the os dilated slowly the patient was given chloral gr. xx at 4 p.m. and at 8.15 p.m. At 10.45 p.m. membranes ruptured spontaneously. 11.30 p.m., os fully dilated.

13th.—1.30 a.m., head low down, but pains feeble. Delivery finished with forceps. Placenta expressed, 1.50. Uterine contraction not good; 25 ounces of blood lost. Ergotine, 3½ grains, given hypodermically. Child, female, living; weight, 4 lbs. 12 ounces.

14th.—Diarrhœa and vomiting.

15th.—Vomiting better; diarrhœa continues.

CASE 6.


DATE. DEC. 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
DELIVERY
URINE IN 24 HRS. IN OUNCES
TEMPERATURE F°
PERCENTAGE OF UREA
SPECIFIC GRAVITY
ALBUMIN IN 20THS.
PULSE 92.100 96.100 92.108 104.106 100.104 104.110 104.80 88.94 92.88 80.74 84 82 76.70 70.70 72.84 82.84
RESPIRATION 20.24 24.24 20.22 20.22 24.22 20.22 20.18 20.20 20.18 20.18 22.20 18 18 18 18 20 23.24
BOWELS 1 10 5 5 6 6 3 2 0 0 0 1 0 1 0

16th.—Diarrhœa better.

20th.—Diarrhœa ceased.

30th.—Discharged.

August, 1893.—Patient thinks herself quite well. Has no swelling of legs. Has had a miscarriage since confinement.

The temperature never exceeded 99°.

Urine: Quantity.—The urine was drawn off twice a day by catheter, and the patient was instructed to avoid if possible emptying the bladder at other times. Probably, however, some did escape when the bowels acted, and as there was diarrhœa I think a good deal may have been lost, and therefore that the quantities recorded err more than in most of the cases I have published; but all the error is in the direction of the figures being too low. This case shows an amount collected below the average of health, but the same diuresis after delivery as the others, the curve reaching its maximum on the third day. But on this day the quanity of urine was only 42 ounces. After this day the daily average collected was 25½ ounces.

Specific gravity.—This varied from 1009 to 1021. Its average was 1015. Its fluctuations were, broadly speaking, inversely as the quantity of the urine.

Urea.—The urea curve shows a rough correspondence to that of the quantity of the urine. On the day before delivery the amount estimated was 240 grains. After delivery there was an even larger increase in the urea than in the urine, on the third day as much as 700 grains being estimated. From the fourth day onwards the average daily amount was 279 grains, and the fluctuations above and below this amount were not great. The percentage of urea was never below 2, and on the second and third days after delivery was as high as 3·55. From the fourth day onward it averaged 2·6.

Sugar.—The urine at no time contained any sugar.

Deposit.—On most days there was a deposit of urates.

Albumen.—The urine collected after delivery contained about one-third of its bulk of albumen. It then gradually

diminished during the week following delivery, and after this date was reduced to a small trace.

In this and the foregoing papers I have related eleven cases of pregnancy with albuminuria, but without eclampsia. I shall now summarise the facts they exemplify, and compare them with the cases of eclampsia which I have epitomised in a paper published in vol. xxxiii of the Society's 'Transactions.'

For convenience I shall refer to them by consecutive numbers as follows :

Paper 1.—	'Transactions,'	vol. xxix,	Case	1—1.
Paper 2.—	,,	vol. xxxii,	,,	1—2.
,,	,,	,,	,,	2—3.
,,	,,	,,	,,	3—4.
,,	,,	,,	,,	4—5.
Present communication,			Case	1—6.
,,	,,	,,		2—7.
,,	,,	,,		3—8.
,,	,,	,,		4—9.
,,	,,	,,		5—10.
,,	,,	,,		6—11.

As to parity : in two it was the first pregnancy, in three the second, in one the third, in one the fifth, in one the sixth, in one the tenth, in one the sixteenth, and in one no history was attainable.

In this point there is a difference between the cases of eclampsia and those of albuminuria without eclampsia. The pregnancy was the first in seven out of twelve cases of eclampsia, but only in two out of ten cases of albuminuria without eclampsia.

The average age of the eclampsia patients was twenty-five ; that of the cases of albuminuria without eclampsia 29·6.

As to the effect on the child : out of eleven cases, in one pregnancy was terminated at five months. In one the child died *in utero*. In one the child died during

delivery from pressure on the cord. In the other cases the children were born alive.

We see here a difference between the cases of eclampsia and those of albuminuria without eclampsia. Among the eclampsia cases four children out of ten died *in utero;* among the cases of albuminuria without eclampsia only one out of ten.

Urine: Quantity.—Out of the eleven cases, in four (3, 5, 10, and 11) the quantity of urine passed daily before delivery was below the average of health; but in two of these (5 and 11) the collection was so imperfect that the apparent diminution was largely due to this cause. Of the other two, one (3) was a case of dropsy of the amnion, in which, therefore, the tension within the abdomen was greater than usual. In the other (10) I have unfortunately no note of the size of the belly, but the patient had reached full term, the child weighed 7 lbs., and there was œdema of the legs so great as to make the skin tense; so that it may be inferred that here there was considerable tension within the belly. In these cases, although less urine was passed than usual, yet there was nothing like the diminution observed during eclampsia. In the case of hydramnios (3) the daily amount of urine before delivery averaged 25 ounces, and in the case with great œdema of legs (10) it averaged 24½ ounces. In all the other cases the quantity of urine was more or less above the average. The largest increase was in Case 7, in which the average daily amount before delivery was 75 ounces. This patient died about a month after delivery. It is noteworthy that in the only one of the eclampsia cases that passed into chronic Bright's disease there was polyuria.

In two patients it was not possible to ascertain the daily amount of urine after delivery. These two unfortunately were fatal, one seven days, the other a month after delivery. In each of the other cases delivery was followed by increased diuresis. The diuresis was greatest in the patient whose urine had been diminished in quantity before delivery. In the hydramnios case (3) it rose to 118

ounces in the twenty-four hours; and in the patient at term with swollen legs (10) it reached 100 ounces. Further, in the patients who got well, that is, who left the hospital free from albuminuria (2, 3, 9, 10, 11), the increase in the amount of urine after delivery was greater than in those (1, 4, 6, 8) in whom the albuminuria persisted. But in this point the difference is not so striking that I need trouble the Society with details, and I think it less important than the variations of the urea excretion, of which I shall presently speak.

Albumen.—First, as to quantity of albumen and its variation. Among these eleven cases of albuminuria without eclampsia before delivery, in two the urine is said to have been solid on boiling (2, 3). In five it contained half or more of its bulk of albumen, but did not become solid (1, 5, 7, 8, 9). In four it contained less than half its bulk (4, 6, 10, 11).

Comparing these cases with those of eclampsia, I find that among the eclampsia cases, in every one the urine was at some time solid with albumen. In eight the urine was solid with albumen when the patient was admitted. In four there was half or less albumen when the patient was admitted, but the urine became solid or nearly so after the fits.

In this a difference is apparent between the cases of albuminuria without eclampsia, and those of eclampsia, viz. that in the latter the urine contains much more albumen. In three of the latter the amount of albumen was increased while the patient was having fits. This may suggest that the difference between the two sets of cases may be simply because the fits produce increased albuminuria. But this is not the sole explanation. First, in two of the cases of albuminuria without eclampsia, although there were no fits, the urine was solid with albumen. Second, in two cases in which the fits came on after delivery ('Trans.,' vol. xxxiii, Cases 1 and 5) the amount of albumen diminished although the fits continued to occur. Third, the amount of albumen does not show a variation concomitant with the number of the fits and the

length of time during which they have persisted. Thus in Case 2, 'Trans.,' vol. xxxii, the patient had had five fits in four hours, and the urine only contained half its bulk of albumen. In Case 2, 'Trans.,' vol. xxxiii, the patient had had five fits in three hours, and the urine only contained two-fifths of its bulk of albumen; while in Case 5, 'Trans.,' vol. xxxiii, the urine drawn off immediately after the first fit was found solid with albumen.

The relative amounts of serum-albumen and paraglobulin were unfortunately only ascertained in four cases. In two (5 and 8) the albumen was almost entirely serum-albumen. One of these died, and in the other the disease persisted. In one (1) about one-sixth of the precipitate was paraglobulin. In this case the disease persisted. In one case (3) about half the albuminous precipitate was paraglobulin. This was the case of dropsy of the amnion in which there was great diminution in the quantity of urine before delivery, and copious diuresis and increase in the urea excretion after delivery. I regret that this point was lost sight of in the other cases. These four cases support the view that "paraglobulin is in excess when the transudation is due to altered pressure in the vessels, while serum-albumen is found in cases in which the kidney structure is diseased."*

Seeing this difference exists, the question suggests itself, Does the presence of a large amount of albumen in the urine modify the prognosis?

We have ten patients in whom the urine was solid. Of these, eight had eclampsia, two died, six recovered completely. In two there were no fits; both these completely recovered.

We have five cases of albuminuria without eclampsia whose urine contained half or more of its bulk of albumen. Of these five, two died, one recovered completely, in two the renal disease persisted.

We have eight patients in whom the urine contained less than half its bulk of albumen. Of these, four had

* 'Transactions,' vol. xxix, p. 548.

eclampsia; two died, one recovered, and in one the renal disease persisted. In four there were no fits. Of these two completely recovered, and in two the renal disease persisted.

In short, *urine solid:* two deaths, eight recoveries. *Urine not solid:* four deaths, four recoveries, five persistence of disease. Grouping them differently, *more than half albumen:* fifteen cases, four deaths, nine recoveries, two persistence; *less than half albumen:* eight cases, two deaths, three recoveries, three persistence.

It would seem, therefore, that a large amount of albumen goes with slightly greater immediate danger, especially if fits are present, but with less tendency to persistence of the renal disease.

The difference between the two sets of cases that has been just pointed out suggests a further question, Is there any difference in the mode of onset?

In the eight cases of eclampsia with more than half albumen the duration of symptoms before the fits was as follows:—In one, a few hours (3); in one, twelve hours (1); in one, thirty-six hours (7); in two, two days (5, 11); in one, three weeks (10). Of these, the patient (10) who had premonitory symptoms for three weeks, and one (11) of those who had them for two days, died; the others, whose premonitory symptoms were of less duration, recovered.

In the four cases of eclampsia in which the urine contained half or less of its bulk of albumen the following was the duration of symptoms before the fits:—In two, a week (6, 9); in two, three weeks (4, 8). The two former of these died; of the latter, one recovered, in the other the albuminuria persisted. It will be seen that among the eclampsia cases the premonitory symptoms had been present longer in those that had the less albumen; that in those in which the albumen was solid with albumen the symptoms came on more rapidly.

In the eleven cases of albuminuria without eclampsia the duration of premonitory symptoms was as follows:—In the two cases in which the urine was solid with albumen,

in one, a month (2); in two, indefinite, perhaps four months (3). Both these patients recovered.

In the five cases in which the urine contained half its bulk or more of albumen, but was not solid, in one, a month (9); in one, six weeks (1); in one, indefinite (5); in one, twelve months (7); in one, four years (8). Of these, the first, in which the symptoms were of the shortest duration (9), recovered. Of the others, two (5, 7) died, and in two (1, 8) the albuminuria persisted.

In the four cases in which the urine contained less than half its bulk of albumen, in one, a week (11); in one, three weeks (10); in one, a month (4); in one, sixteen months (6). In three of these the disease persisted; in one only (10) did recovery take place. Comparing these cases with those of eclampsia, one broad fact is seen, viz., that in them the symptoms had lasted longer than in those who had fits. In other words, the disease producing eclampsia was a more acute morbid process than that present in the cases of albuminuria without eclampsia.

Urea.—In every one of the cases of albuminuria without eclampsia the daily amount of the urea excreted in the urine was below the average of health. There was a difference in this respect between the cases that recovered and those in which the albuminuria persisted. The deficiency was greater in the cases that did not lose the albuminuria. Averages will show this better than the records of individual cases. The average daily excretion of urea in those that got well was 270 grains; of those in which the disease persisted, 215 grains. Among these latter was one who two years afterwards was apparently in as good health as at the time of her confinement, although her urine still contained half its bulk of albumen. In this case the renal function cannot have been much impaired, and her daily urea excretion before the confinement was 280 grains. If her case be removed from the list of those in which kidney disease persisted, their average daily excretion of urea is brought down to 198 grains.

In every one of the cases of albuminuria without

eclampsia there was an increase of the urea excretion after delivery. This increase took place, as the charts will show, very quickly after delivery, before the patients had left off the liquid diet usual during labour and the first days of the lying-in period. If we compare the cases which recovered with those in which the disease persisted, we find that in those which recovered the increase in the lying-in period was greater than the increase in those in whom the renal disease persisted. The quantity of urea excreted daily varies, from causes which in individual cases cannot always be identified. I shall show this difference by quoting the maximum and minimum excretion in a day during the lying-in. I give the figures in each case, and the averages.

I. *Cases that recovered.*

	Before delivery.	After delivery.	
Case No.	Average daily excretion.	Maximum daily excretion.	Minimum daily excretion.
2	215 grains.	606 grains.	262 grains.
3	282 „	800 „	260 „
9	279 „	475 „	100 „
10	335 „	370 „	135 „
11	240 „	700 „	300 „
Average of the whole	270 „	Average maximum 590 „	Average minimum 211 „

II. *Cases in which the renal disease persisted.*

1	245 grains.	240 grains.	112 grains.
4	156 „	360 „	160 „
6	240 „	295 „	104 „
8	280 „	620 „	390 „
7	152·5 „	578 „	111 „
Average of the whole	215 „	Average maximum 429 „	Average minimum 173 „

Deducting Case 8, who two years afterwards seemed in unimpaired health although the albuminuria persisted, we have—Average of the whole, 198 grains; average maximum, 368 grains; average minimum, 122 grains.

Deposits.—In two cases I have no record whether casts

were present or not. In all the others casts were present.

Retinitis.—Albuminuric retinitis was present in three (1, 4, 6). In all these patients the albuminuria persisted. Two of these died within a few months, the other I have been unable to trace. In one case the eyes were not examined. In one there was a doubtful retinal hæmorrhage. This patient recovered. In the cases of eclampsia with retinitis one died, and in the other the disease persisted. Retinitis thus seems to be a sign of bad prognostic import.

Summary.—A comparison of these cases with one another and with the cases of puerperal eclampsia that I have published in former papers points to this general conclusion.

There are at least two kinds of renal disease of which a pregnant woman may be the subject, and to which pregnant women seem specially liable. One of these is a very acute disease, coming on either without any premonitory symptoms or with premonitory symptoms of very short duration, *i. e.* usually measurable by days. It attacks chiefly primigravidæ. It often causes intra-uterine death of the child. It is attended with extreme diminution in the quantity of urine, and the small quantity of urine passed is greatly deficient in urea, but contains enough albumen to make it solid in boiling. This is the disease which is accompanied with rapidly recurring fits. If the disease runs a favourable course the fits cease, then the urine increases in amount, and the percentage of urea in it rises. If the excretion of urea is not re-established the case quickly ends fatally. Such cases seldom if ever pass into chronic Bright's disease.

The other is a disease which attacks older subjects, chiefly those who have had children before. Its premonitory symptoms are gradual and slow in onset, *i. e.* usually measurable by weeks or months. It less often leads to intra-uterine death of the child. It is generally accompanied with increase in the quantity of urine, with copious loss of albumen, but not so much in proportion to the

urine as in the more acute disease; and with diminution in the amount of urea, but not nearly so great a diminution as in the acute disease. In these patients delivery is followed by temporarily increased diuresis, and by increase in the excretion of urea. When this increase is considerable the patient usually gets well, and the albuminuria ceases. When the increase is only slight the albuminuria persists, and the case becomes one of chronic Bright's disease. This form of disease is sometimes attended with fits, but generally not. The presence of albuminuric retinitis affects prognosis unfavourably. When the pressure within the abdomen is greater than usual the amount of urine may be diminished; but in such cases the diuresis and the augmented excretion of urea after delivery are proportionately greater. In the acute disease which causes eclampsia, and in the chronic disease when it is associated with excessive intra-abdominal pressure, much of the albumen is paraglobulin. The cases in which the albumen is mainly serum-albumen generally either die or pass into chronic Bright's disease.

Dr. CULLINGWORTH thanked the President not only for the paper just read, but for the series of papers of which this formed the conclusion, the whole series having been of the highest scientific value. Great difficulties surrounded the subjects of puerperal albuminuria and puerperal eclampsia, and numberless theories had been propounded, all of which failed more or less to adequately explain the phenomena. What they now wanted was not more theories, but an unbiassed and minutely accurate clinical record of a series of cases sufficiently extensive to embrace most of the varieties, and to enable some general conclusions to be drawn. Dr. Herman's papers provided such a record, and no future writer on these subjects could afford to overlook the collection of observations which he had with great labour got together, and had now placed at the disposal of the profession. It was customary for the President to convey to the readers of papers the thanks of the Society for their communications. The President obviously could not be expected to do this on the present occasion. He (Dr. Cullingworth) therefore desired to move a hearty vote of thanks to the President, and if that motion were seconded he would ask Dr.

Watt Black, the only ex-president in the room, to be good enough to put the resolution to the meeting.

Dr. GILES said he had much pleasure in seconding Dr. Cullingworth's motion. He could endorse all that Dr. Cullingworth had said in appreciation of this paper and the others of the same series which Dr. Herman had previously given them. To him it seemed that the most notable feature of these papers was the valuable analysis of facts which they contained. A good many facts had been previously collected, but from want of clear-sighted analysis the subject was still obscure. At the same time he fully appreciated the care and thoroughness with which Dr. Herman's facts had been obtained. The division into two classes which had been adopted in the paper was conducive to a better understanding of the relationship between eclampsia and albuminuria. These two classes showed a close parallelism with acute and chronic nephritis respectively apart from pregnancy. It was stated in text-books that eclampsia could occur without albuminuria. He had not seen a case, but had met with some half-dozen cases of uræmia in which no albumen was found in the urine. The explanation was not very easy; it was possible that in such cases the kidney structure was too far diseased even to admit the passage of albumen into the tubules. But whatever the explanation, it was pretty clear that the absence of albumen, whether in eclampsia or in uræmia, could not be interpreted as excluding kidney disease.

Dr. AMAND ROUTH described two cases which he was attending at the same time in an institution. One was five and the other seven months pregnant. They both had head symptoms, with marked albuminuria and œdema. The one five months pregnant had some retinal hæmorrhage, a somewhat severe epigastric pain, and the deposit on boiling her urine was almost pure serum-albumen. The woman who was seven months pregnant had no retinitis, no epigastric pain, and a large proportion of the deposit on boiling her urine was paraglobulin. The former case developed eclampsia the day after she was first seen, miscarried, but did well, the albumen disappearing in a month. The latter case had labour induced, and had no bad symptoms, all albumen disappearing shortly after labour. He asked for further information as to the significance of paraglobulin in the urine, and as to epigastric pain, which he believed to be a very unfavourable symptom.

Dr. WILLIAM DUNCAN thought the series of papers by the author on the subject under discussion of the greatest importance both to the public and the profession. He agreed with the author as to there being two classes of cases of renal disease associated with pregnancy. He thought when there was marked retinal disease that the prognosis was much graver than when such a condition was absent. He mentioned two cases of preg-

nancy associated with albuminuria in which there was kidney disease and well-marked albuminuric retinitis; in both he induced abortion, with the result that in one of the cases the retinal disease was much improved, but in the other the total blindness which existed at the time of emptying the uterus still continued two months later when the patient left the hospital. He (Dr. Duncan) thought the uterus should be at once emptied when there was any indication of retinal mischief.

Dr. PETER HORROCKS said his own experience coincided with that of Dr. Herman regarding the gravity of retinal hæmorrhages in cases of eclampsia. He could not remember a single recovery when such a lesion was present. He thought the new facts elicited by the careful observations made would enable one to suggest suitable treatment in different cases.

The PRESIDENT said that Dr. Routh's cases were very interesting, and it was to be hoped that he would publish a full account of them. He (the author) had stated the conclusions to which his cases pointed, but the cases were too few to settle finally the import of the amount of paraglobulin. He did not think that the acute disease which produced eclampsia was acute nephritis. The onset of the fits without premonitory symptoms, and the recovery within thirty-six or forty-eight hours were quite unlike anything seen apart from pregnancy; added to which was the fact that in some of the fatal cases the kidneys presented no morbid change that could be identified by the naked eye. He agreed with Dr. Duncan that if albuminuric retinitis were present during pregnancy, labour should be induced; but he would go further, and urge the prompt termination of pregnancy in any case in which this condition was complicated with unquestionable kidney disease. A pregnant woman with kidney disease was liable to eclampsia, and the probability of a temporary renal change passing into chronic Bright's disease was greater if the pregnancy went on; and in addition Bright's disease often caused intra-uterine death of the child. He thought that it was desirable to restrict the application of the term "eclampsia" to cases of albuminuria with convulsions. The pathology of cases in which there was no albumen was quite different, and he thought it would be better to speak of these simply as cases of "fits" or "convulsions," not as "eclampsia."

A NOTE ON VAGINAL SECRETION.

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(Received November 1st, 1893.)

The secretions found in the vagina are derived partly from the mucous membrane of the cervix, partly from the mucous membrane of the uterine body, and partly from the surface of the vagina itself. Any secretion from the vaginal surface is found, therefore, under ordinary circumstances, mixed with secretions from the neck and body of the uterus. Secretions in the vagina must be distinguished from secretions of the vagina. Inasmuch as doubts have been expressed as to whether the vaginal surface does contribute at all to the fluids found moistening its walls, it may be worth while in the first place, before discussing the nature of this secretion, to offer a few remarks in proof that the vagina does secrete. I have had the opportunity of investigating the secretions found in the vagina in several cases in which I had previously extirpated the uterus for malignant disease. In all these cases the wound in the vaginal vault had completely healed, and the walls of the vagina appeared healthy and were free from cancerous infiltration. It was found on all occasions, when the parts were examined, that the vaginal surface was moist and bathed with a secretion which possessed a distinctly acid reaction. The whole surface of the vagina, lower and upper part alike, was moistened with this secretion. Now in these cases it was impossible for the fluid bathing the parts to have

been derived from any adventitious source, and therefore it must have come from the vagina itself.

In cases of extensive prolapse, where the os externum lies permanently outside the vulva, it is customary to find the vaginal walls completely everted with the exception of the lowest inch of the posterior wall. It was always found that the walls of the pouch thus formed were moist, and possessed an acid reaction. In these cases also the fluid present must have been derived from the vaginal surface. From a consideration of these facts I think it may be asserted without fear of contradiction that the vagina secretes.

The next point to consider is how this fluid is secreted, and in this connection it will be necessary to briefly allude to some of the arguments that have been brought forward, on theoretical grounds, to prove that the vagina does not secrete. The chief argument in support of this view seems to be founded on the assertion that the vagina possesses no glands. Whether there really are no glands in the vagina, or whether, as Von Preuschen and others have asserted, there are glands, it must be generally admitted that their number is exceedingly limited. The presence or absence of glands has, however, but little to do with the presence of secretion.

The primitive secreting medium is a surface, and glands in their simplest forms are nothing but involutions, tubular or saccular, of this surface. It is true that in some cases these involutions undergo a high degree of specialisation, and develop powers of secretory activity not possessed by the original surface from which they were derived; but in their simpler forms the glandular involutions are chiefly of service in affording a ready means of increasing the superficial area of the secreting surface.

In the large intestine, for example, there are a great number of simple tubular glands opening on the surface, and there seems to be no reason to believe that the cells lining these tubules possess any different functions from those lining the surface. An increase in the secreting

surface is obtained in the vagina, not by a dipping in or involution of the lining membrane, but by the formation of ridges or rugæ, and a similar phenomenon is seen in the Fallopian tubes, where the rugæ thus formed are highly complicated. Various types or forms of the secretory process are seen in the human body. Secretion in its most highly specialised form is seen in the salivary glands or pancreas. Here the gland-cells during a period of rest elaborate and manufacture certain specific substances which are stored up in the cells in the form of minute granules. During active secretion the substances so manufactured are poured out into the lumen of the alveolus, and this process is accompanied by an active transudation of watery material from the blood, which is probably not simply to be regarded as filtration. The secretory cells are not broken down or destroyed by this process of active secretion, although a certain amount of shrinking occurs from the disappearance of the granules with which they were previously loaded. A modification of this process is seen in mammary secretion. In this case there is a manufacture and storage of materials in the gland-cells, but the expulsion of these materials into the alveolus of the mammary gland is attended with partial destruction of the secreting cell itself, the broken-down liquefied cell-substance forming one of the constituents of the milk. The sebaceous glands illustrate a still further modification of the process of secretion. These glands are formed as solid diverticula of the Malpighian layer of the epidermis. In these glands the cell-substance of the central cells—that is, those most distant from the basement membrane—is constantly undergoing changes of a fatty nature. The nuclei of these cells shrink, and the cells loaded with fat are thrown off and discharged, these altered cells themselves forming the secretion. To quote a sentence from Foster, "the secretion of sebum is, in fact, a modification of the particular kind of secretion taking place all over the skin, and spoken of as shedding of the skin."

In structure the vagina is very similar to the Malpighian layer of the epidermis, and the process of secretion from the vagina mainly consists in a desquamation or shedding of the superficial layers associated with a certain amount of active transudation of albuminous fluid. The type of secretion seen in the vagina appears to be closely analogous to that of the sebaceous glands, and though widely different from the process as observed in the parotid or submaxillary glands, yet none the less does it deserve the name of secretion. In sebaceous secretion the cell-nucleus has disappeared, and the cells are found loaded with fat. In vaginal secretion the nucleus is still visible. On several occasions specimens of vaginal secretion were treated with osmic acid, with the object of trying to determine whether the epithelial cells present in it showed any evidence of fatty degeneration. These epithelial cells, untreated by any reagent, present a slightly granular appearance. After treatment with osmic acid minute black dots are seen studding many of the cells. Whether this appearance depends upon the presence in them of molecular fat it is not possible absolutely to assert.

The secretion obtained from the surface of the vagina in the above-mentioned cases, where the uterus had previously been extirpated, was opaque and whitish in colour, very closely resembling in appearance and consistence thick starch mucilage. In other cases it was found to have a slightly yellowish tinge, so that it bore a close resemblance to thick cream. A drop of this fluid examined under the microscope showed a large number of flattened nucleated cells similar to those covering the surface of the vagina. As mentioned above, these cells appear slightly granular. The milky appearance which the secretion possesses is, no doubt, dependent on the presence of these epithelial cells in it.

Some of the secretion was placed in a test-tube, a small quantity of water added, and the mixture then boiled. Well marked coagulation resulted. A small quantity of the mixture was tested by heating it with nitric acid. A

yellow colour was produced, which deepened on the addition of ammonia (xanthoproteic reaction). A further quantity was tested with copper sulphate solution and liquor potassæ, and the violet colour showing the presence of a proteid substance appeared (biuret reaction). From these reactions it is clear that vaginal secretion contains a proteid material belonging either to the class of native albumins or globulins. Mucin also will give the xanthoproteic reaction, but not the biuret one, so that though it cannot be absolutely affirmed that no mucin is present, yet clearly either albumin or globulin is present as well.

The abundance of the coagulum produced by boiling would suggest that mucin, if present, must occur only in very small quantities. As no direct evidence of the presence of mucin could be obtained, it would seem advisable that the use of the expression "vaginal mucus" should be discontinued. It should be added, however, that the limited amount of the secretion obtainable for experimental purposes might permit of the presence of small quantities of mucin being overlooked.

The reaction of the secretion bathing the vaginal walls was on all occasions found to be acid, and this fact has long been known. It has been shown by Döderlein and others that bacteria are always present in the vagina. The question therefore presents itself, whether the secretion when poured out from the vaginal surface is acid, or whether the acidity is merely the result of decomposition due to the action of the bacteria upon it. The following experiment was therefore undertaken to determine this point. Two plugs of absorbent cotton wool were soaked in a strong solution of blue litmus, and then dried. The colour of these plugs thus treated was a pinkish violet. The vagina of a patient whose uterus had been extirpated about six months previously was thoroughly douched and swabbed out with a 2·5 per cent. solution of carbolic acid. It is proper to state that the reaction of the vaginal secretion in this patient had been frequently tested, and was always found to be acid. Carbolic acid was used for

the purpose of disinfecting the vagina instead of corrosive sublimate lotion, because the former does not alter or destroy the colour of blue litmus, whereas the latter turns blue litmus red, even when no acid is added in the preparation of the lotion. The vagina having been thoroughly cleansed in this way, the plug of prepared cotton wool which was first wrung out in the carbolic lotion was passed up to the fundus of the vagina, and the lower part of the vagina was then plugged with iodoform wool. At the end of eighteen hours the plug was removed. It was found to be bathed with a sticky secretion, and had turned a bright blue colour, showing that it had been in contact with a secretion possessing an alkaline reaction. As a control experiment the other plug was in like manner wrung out in a 2·5 per cent solution of carbolic acid, and then placed on one side for the purpose of comparison with the plug which was introduced into the vagina. This was done to eliminate the possibility of the carbolic acid having any effect upon the colour. No change was observed in this second plug.

This experiment points strongly to the conclusion that the secretion of the vagina is really alkaline, and that the acidity normally found to be present depends on the subsequent decomposition of the material secreted. This experiment would also seem to show that the acid formation is the result of the presence and growth of micro-organisms, because when these micro-organisms are excluded no acidity is developed. Döderlein has shown that a bacillus which he calls the bacillus vaginæ exists in the normal secretion. This bacillus can be cultivated in bouillon containing 1 per cent. of sugar, and also in agar-agar containing a similar proportion of sugar. It seems to grow most readily in fluid media. When the nutritive medium contains sugar a free acid is developed. This acid he believes to be lactic acid. Working from a different standpoint, my own experiments point to the same conclusion as those of Döderlein, namely, that the acidity of the vaginal secretion is due to micro-organisms.

Döderlein's experiments, as far as I have been able to follow them, do not seem to me to prove more than that the vagina contains a bacillus; and that this bacillus, if cultivated in a fluid medium containing sugar, gives rise to free lactic acid. My experiments show that if bacteria are excluded from the vagina the secretion poured out is alkaline.

The conclusion that may be drawn from these two sets of facts is that the acidity of the vaginal secretion depends on the presence of bacteria. The conclusion of Döderlein that the acid present in the vaginal secretion is lactic acid does not seem to me to be warranted by his experiments. All that he really proves is that the bacillus vaginæ can convert sugar into lactic acid. There is no evidence that there is sugar in the vagina. Owing to the difficulty in obtaining more than a very small quantity of normal vaginal secretion, experimental inquiry into the nature of the acid present must necessarily be unsatisfactory. In Von Jasch's work on 'Clinical Diagnosis' the following method is recommended as a test for small quantities of lactic acid. Two drops of Liquor Ferri Perchloridi are added to fifty cubic centimetres of water. The faint yellow colour of the solution deepens on the addition of lactic acid, but not of butyric acid. This test was tried in several cases with vaginal secretion, but no deepening of the colour could be observed. It may be that the quantity added was too small, and that the test was not delicate enough to estimate minute amounts of lactic acid even if present. By the use of this test, however, no direct evidence of the presence of lactic acid could be obtained. That the acidity is not due to hydrochloric acid can be easily proved. Congo red offers a very delicate test for this acid, as even when minute traces are present the red becomes converted into a dark blue colour. Pieces of filter paper were soaked in a solution of Congo red and then dried. On moistening strips of this prepared paper with the secretion from the vagina no such alteration in colour was observed.

It is possible that the acidity of vaginal secretion may be due to the presence of certain fatty acids, such as butyric acid, but no direct evidence on this point could be obtained because there do not appear to be any satisfactory tests for this substance when present only in minute quantities. Butyric acid is found in sebaceous secretion, and the analogy that exists between vaginal secretion and the secretion of sebum would suggest that this is the acid which is really present.

Unfortunately I am unable to substantiate this suggestion by any direct proof, so that the real nature of the acid must still remain undecided.

The PRESIDENT thanked Dr. Gow for his interesting contribution to physiological knowledge, and expressed his admiration both of the trouble Dr. Gow had taken to get a correct result, and of his ingenuity in devising experimental methods of solving the problem he had approached.

Dr. LEWERS said he had had the opportunity of examining several of his cases of vaginal hysterectomy at times subsequent to the complete healing of the wound at the top of the vagina, and he had not observed that the vagina in these cases was less moist than normal.

Dr. HORROCKS said he had always believed in a vaginal secretion, and he considered Dr. Gow's facts good proof. At the same time he thought more facts were required before it could be accepted that this vaginal secretion was alkaline at first, and that it only became acid subsequently through the action of bacteria. He was a little sceptical about the invariable presence of bacteria in a healthy woman; and even if they were proved to exist, then he should argue that they had a sort of right to be there, that they were not noxious but friendly bacteria, and that possibly they did good. Secretion from virgin vaginæ would have to be examined before these points could be settled, and of course it would only be on rare occasions that such secretion could be obtained. He thought the subject of considerable importance, not only physiologically, but also pathologically in its bearing upon coagulation, dysmenorrhœa, &c.

Dr. Gow, in reply, said that there had been many experiments made to prove the presence of bacteria in the healthy vagina, though there was no suggestion that such bacteria were pathogenic. He himself had made no experiments in this direction, but, among other things, he had tried to show that if organisms

were excluded from the vagina the secretion was alkaline. It would be very difficult to carry out Dr. Horrocks's suggestion and make experiments similar to those described in the paper in single women. Moreover the presence of cervical secretion would invalidate the results.

ANNUAL MEETING.

FEBRUARY 7TH, 1894.

G. ERNEST HERMAN, M.B., President, in the Chair.

Present—66 Fellows and 4 visitors.

The President declared the ballot open for one hour, and appointed Dr. W. Rivers Pollock and Dr. C. Hubert Roberts as Scrutineers.

Books were presented by Dr. Boxall, Mr. J. Bland Sutton, and the American Gynæcological Society.

Bruce Hamilton, L.R.C.P.Lond.; Arnold W. W. Lea, M.D.; William Sutton Pratt, M.D.; and Hugh R. Smith were admitted Fellows of the Society.

John Campbell, M.A., M.D. (Belfast), and Henry L. McKisack, M.D. (Belfast), were declared admitted.

The following gentlemen were proposed for election:—Thomas Henry Barnes, M.D.St.And.; Hedley Coward Bartlett, L.R.C.P.Lond. (Saffron Walden); George Arthur Harold Comyns Berkeley, B.A., M.B., B.C.Cantab.; Woodley Daniel Betenson, L.R.C.P.Lond.; Robert Herbert William Hughes Brabant, L.R.C.P.Lond.; David Brown, M.D.Lond.; Robert Francis Burt, M.B., C.M.Edin.; John Henry Chaldecott, L.R.C.P.Lond.; Lennard Cutler, L.R.C.P.Lond.; William Gilbert Dickinson, L.R.C.P.Lond.; John William Dickson, B.A., M.B., B.C.Cantab.; Henry

William Drew, F.R.C.S. (Croydon); Charles Herbert Fazan, L.R.C.P.Lond. (Wadhurst); Henry Wilkes Gibson, L.R.C.P.Lond.; David Livingston Hamilton, L.R.C.P.Ed. (Great Missenden); Bernard Fred. Hartzhorne, M.R.C.S.; Ernest H. Helby, L.R.C.P.Lond.; Edward Horne, M.R.C.S. (Wallingford); Wilfrid E. Hudleston, L.R.C.P.Lond.; Herbert James Ilott, M.D.Aber. (Bromley, Kent); James P. James, L.R.C.P.I.; Evan Jones, L.R.C.P.Lond.; Sidney Herbert Lee, B.A., M.B., B.C.Cantab.; William Leppingwell Livermore, L.R.C.P.Lond.; William Christopher Loos, L.R.C.P.Lond. (Great Missenden); Albert Stanley McCausland, M.D.Brux. (Swanage); John McOscar, L.R.C.P.Lond. (Watlington); William Henry Mondelet, M.D. (Brighton); Edgar Nicholson, M.R.C.S.; Solomon Peake, M.R.C.S.; Clement Pound, L.R.C.P.Lond. (Odiham); Cecil Robertson, M.B., C.M.Aber.; Horace Savory, M.A., M.B., B.C.Cantab. (Haileybury); Archdale Lloyd Sharpin, L.R.C.P.Lond. (Bedford); Thomas George Stevens, M.D., B.S.Lond.; Montague Tench, M.D.Brux. (Great Dunmow); Frank Alex. Wagstaff, L.R.C.P.Lond. (Leighton Buzzard); Thomas Alfred Walker, L.R.C.P.Ed.; and William Alfred Ward, L.R.C.P.Lond.

ABSCESS IN ABDOMINAL WALL.

Shown by R. J. Probyn-Williams, M.D.

The patient, aged 40, was admitted to the General Lying-in Hospital for her fourth confinement. Labour was well advanced, but the head had not engaged in the brim owing to contraction of the pelvis, the true conjugate being afterwards found to be three inches. She had been advised to have labour induced at the seventh month. For the last month of the pregnancy she had frequently complained of intense pain over the pubes. Forceps were

applied without result, and the prolapsed cord being pulseless the child was delivered by cephalotripsy, which was easily accomplished. The temperature on the following morning was 102°, but fell to normal the same evening, and remained so till death on the morning of the fourth day. There was blood and pus in the urine on admission.

After delivery the patient suffered from incontinence, so that no urine could be saved for examination till just before death, when about half an ounce of almost pure blood was withdrawn by catheter. This incontinence, together with pain and tenderness over the pubes, constituted the only symptoms she presented, except rapidity of pulse and breathing. The lochia were normal, and the bowels acted freely on the third day. The patient seemed to be going on well till the morning of the fourth day, when she suddenly became collapsed and comatose, and in spite of all efforts she sank and died in five hours.

Two years previously she had had severe pain in the left loin, which suddenly ceased, and soon afterwards she passed a small stone by the urethra.

On post-mortem examination there was found a diffuse abscess burrowing among the layers of muscle and connective tissue of the anterior abdominal wall. This evidently communicated with the bladder, which was found contracted and contained pus.

Some sticky lymph was found connecting the anterior surface of the uterus and adjacent coils of small intestine to the anterior abdominal wall, but there was no general peritonitis. The uterus and vagina were normal and uninjured.

In the lower part of the pelvis of the left kidney a small calculus was embedded, similar to the one the patient passed two years ago. Apart from this both kidneys and all the other organs were normal.

The course of events in this case was not quite clear, but probably the continuous pressure of the large and firmly ossified head before delivery assisted in producing this abscess as the result of ulceration of the bladder and

extravasation of urine into the connective tissue. The abscess probably ruptured either during labour or soon after, and this allowed of fatal septic absorption.

UTERINE FIBROIDS REMOVED BY ENUCLEATION FIFTEEN DAYS AFTER DELIVERY.

By Robert Boxall, M.D., M.R.C.P.

There are three fibroids, one as large as an orange and two smaller ones not much larger than a walnut, of soft consistence, removed by enucleation from the uterus of a woman 35 years of age. She had had five children, and one miscarriage before the last child. All the labours had been difficult and mostly required forceps. The last birth took place at term. Owing to difficulty in removing the placenta and to the unusual size of the uterus Dr. E. J. Nix, who attended the labour, inserted his hand and discovered three fibroid masses situated in the upper part of the anterior uterine wall. For six days the patient went on well, then labour-like pains set in, followed by a persistent high temperature varying from 103° to 104° or 105° F. The pains became so severe that in spite of morphine, given both by mouth and subcutaneously, she was unable to sleep. A slight sanguineous loss continued. The pains increased in duration and severity, and the patient became worn out and exhausted as in a prolonged labour. The cervix was sufficiently dilated to admit the index finger, and high up the mass could just be reached. Under the circumstances it was hopeless to expect expulsion of the mass by natural efforts with the aid of ergot. The cervix was accordingly stretched by hydrostatic dilators under an anæsthetic. Attached to the large mass a small polypus was found, which, when pulled upon, broke away from its attachment. The capsule of the

main mass was broken through and enucleation effected by the finger, an écraseur wire being employed as a snare for the purpose of bringing the upper part within reach. Another small mass embedded in the wall immediately below the main fibroid was enucleated in like manner. The patient has since done well.

Spontaneous expulsion, or attempt at expulsion of uterine fibroids after delivery, is well known. The interest of this case lies in the severity of the labour-like process by which the uterus endeavoured to expel the growth, and in the shortness of the interval which had elapsed since the birth of the child.

Dr. Braxton Hicks described a case which occurred to an old friend of his many years ago, where, three or four days after delivery, there were severe after-pains with hæmorrhage. The uterus was explored by the hand, and a large polypus attached to the fundus was found; the pedicle was small; it was fretted through with the thumb-nail, and then it came away. The specimen was in Guy's Museum.

Dr. Champneys said that he had collected cases of the kind and had discussed them in the 'St. Bartholomew's Hospital Reports' some years ago (vol. xiii, 1877, p. 109). The common time after labour for their expulsion seemed to be five to six weeks (p. 121). This was explained by the fact that a real polypus of the body was incompatible with pregnancy, and that it usually took a considerable time for the interstitial fibroid to work its way into the uterine cavity and be expelled.

ACEPHALOUS ACARDIAC FŒTUS.

Shown by Dr. Herman, for A. W. Grogono.

A Committee, consisting of Mr. Bland Sutton, Dr. Giles, and Mr. Grogono, was appointed to report on this specimen.

TUBAL GESTATION OF NINE WEEKS' DURATION SUCCESSFULLY REMOVED THREE HOURS AFTER RUPTURE.

By William Duncan, M.D.

Dr. William Duncan showed this specimen, and gave the following history of the case :—Mrs. H—, aged 35, has had two children (ten and eight and a half years old). No miscarriages. After the last confinement she is said to have had an attack of pelvic peritonitis. On January 19th, 1894, she consulted Mr. Evan Jones, of the Goswell Road, saying that she had (*a*) morning sickness; (*b*) cessation of the menses for seven weeks; (*c*) pain after food; (*d*) loss of appetite; (*e*) swelling and tenderness of the breasts; and (*f*) more or less pain in the lower abdomen for the the last four or five weeks. Mr. Jones considered her to be pregnant and treated the sickness and dyspepsia. On January 24th Mr. Jones was sent for and found the patient suffering from pains (like labour pains) in the abdomen and back, with a slight discharge of blood *per vaginam*. The os was soft, not dilated, and the uterus apparently enlarged. No clots or membrane of any kind were passed. She was treated by rest in bed and opium, so that five days later all pains had gone, and she felt well. On January 30th she went for a walk, and did so for the next three days.

On February 2nd, at 10.30 p.m. (after supper) she went upstairs, and almost immediately after her husband heard a groan, and on going to her found her on the floor, apparently dying. Mr. Jones (who lives close by) saw her in a few minutes, and found her perfectly collapsed, pulseless, and extremely pale. A small quantity of brandy and water was administered, soon after which she was sick, and her pulse became perceptible. Mr. Jones diagnosed ruptured tubal gestation, and at once sent for

me, meanwhile the patient was gently lifted from the floor on to the bed, her head being kept low.

On my arrival at 11.30 p.m., I found her blanched, pulse extremely rapid and just perceptible. The abdomen was slightly distended, tender to touch, especially on the left side, and dull on percussion everywhere. Nothing abnormal was made out on vaginal examination.

I agreed with the diagnosis, and advised speedy abdominal section. As, however, she had rallied somewhat, it seemed to me that the hæmorrhage had probably stopped for the time being, so before operation I got the transfusion apparatus with saline solution ready, also obtained a trained nurse, and arranged a table for the operation.

At 1.30 a.m. (three hours after the seizure) ether was administered by Mr. Jones, and with the assistance of Mr. S. H. Lee (my obstetric house physician) I performed abdominal section. On opening the peritoneum a large quantity of fluid blood gushed out. I rapidly examined the left uterine appendage; this felt normal, but on passing to the right side a tumour was at once felt; this was easily drawn out, and proved to be the Fallopian tube distended; the broad ligament was transfixed in the usual way, and the tube and ovary removed. Several very large clots were squeezed out, and smaller ones removed by means of sponges held in ovum forceps; some of the clots were found near the liver. No flushing of the peritoneal cavity was resorted to. The wound was sewn up, dressed with salicylic wool, and the patient removed to bed.

During the administration of the ether the patient's pulse distinctly improved, so that I did not think it necessary to perform transfusion.

The patient made an excellent and uninterrupted recovery.

There were three points of interest in the case:

(*a*) The positive and accurate diagnosis made by the general practitioner.

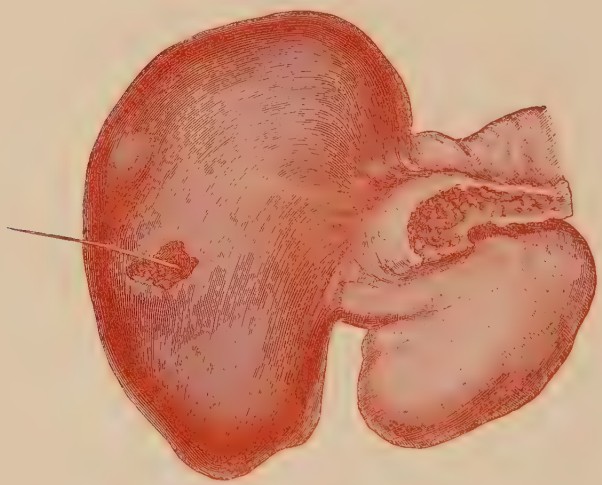
(*b*) The abdomen was not flushed.

(*c*) Transfusion was not performed; had it been done,

doubtless the patient's recovery would have been said (by some) to be due in great measure to this.

Description of Specimen.

The specimen consists of the right ovary and Fallopian tube. The ovary appears normal, measures 4½ cm. long by



Right ovary and tube, showing irregular rupture in tube.

2 cm. broad. On section it presents a large corpus luteum 2 cm. in diameter, but 1½ cm. of this represents a cyst containing a whitish fluid, which under the microscope shows numerous fat granules. The border of the cyst is of a yellow colour. The Fallopian tube is distended in its outer two-thirds, measuring 8 cm. long, 4 cm. broad, and 4 cm. thick.

On its posterior and inferior aspect is an irregular aperture 1 cm. in diameter through which blood-clot is protruding. On longitudinal vertical section the interior of the tube is occupied by a blood-clot, which is thickest at the outer part, where it measures 2 cm. In this clot is situated a

cyst 3 cm. in diameter containing clear fluid, lined by a distinct smooth membrane, and having a fœtus 1 cm. long. attached by a distinct umbilical cord to the wall opposite the thickest portion of the blood-clot.

The fœtus itself shows a distinct cephalic process, which is flexed and on the anterior surface of which two depres-

Tube laid open, showing amniotic cavity, fœtus, and umbilical cord surrounded by blood-clot.

sions can be made out (eyes). There are also rudimentary limbs.

Dr. Cullingworth asked Dr. Duncan if any of the effused clot had become adherent.

Dr. Boxall remarked that in some cases advantage might be taken of the absorbing power of the peritoneum to restore fluid to the blood. In one case where the patient had lost a considerable amount of blood from a ruptured tubal sac he noticed a marked improvement in the pulse consequent upon pouring hot water into the abdomen. The operation took place in a farm-house where the quality of the water was not above suspicion, but care was taken to boil it previously. No special apparatus was required, the water being poured from a ewer directly into the abdomen.

Dr. Horrocks hoped that this case would not deter anyone from using saline injection. He pointed out that it was a case in which not much blood was effused, and the patient's symptoms might have been largely due to shock, seeing that the operation was performed three hours after rupture, and it was his experience that the saline intravenous injection was not so useful in cases of shock as in cases of hæmorrhage.

Mr. Alban Doran asked for Dr. Duncan's opinion on primary hæmatosalpinx—that is to say, hæmorrhage into the tube not caused by the rupture of a fœtal cyst. The majority of cases of hæmatosalpinx were undoubtedly due to tubal gestation. Whatever the pathology of a ruptured tube might be, the surgical indication was immediate operation.

Dr. Braxton Hicks said that in estimating the comparative value of transfusion in the various cases which came before them as obstetricians they must bear in mind the different conditions under which blood was lost. In cases of the surgical kind where they had the flow under complete control, as in the case narrated, it was very different to the floodings of labour, where, although they might have restrained it, yet they were not certain that the uterus might not relax again.

Dr. Dakin wished to ask, in reference to the infusion of saline fluid contemplated by Dr. Duncan, whether he had intended to do this before operating or after. If it were done before the bleeding vessels in the broad ligament were secured, the raised blood-pressure would undoubtedly increase the hæmorrhage into the abdominal cavity and cause further loss of corpuscles. Such an infusion done simultaneously or almost simultaneously with treatment of the bleeding vessels, as in one or more of the cases recently recorded by Dr. Horrocks, would, no doubt, be the most valuable procedure; or infusion afterwards would be useful in preventing the death from "shock" which sometimes follows in such cases. No doubt Dr. Duncan would have adopted the simultaneous method, but this had not been made quite clear in his description, and it was, of course, a matter of great importance.

Dr. William Duncan said that none of the clots were adherent, for they were all freshly formed. He did not flush the peritoneal cavity because he did not think it necessary ever to do so when it contained simply recent blood; although, no doubt, some of the fluid used in flushing would get absorbed, he considered it of more importance to rapidly finish the operation. He did not object to transfusion, but he pointed out that this case (in which several pints of blood had been suddenly poured out) recovered just as surely and rapidly as if the patient had been transfused, whilst she escaped the risks incidental to this procedure. He thought that transfusion should never be done before the abdomen had been opened and the

bleeding vessels secured, otherwise the increased blood-pressure brought on by the transfusion would in all probability cause fresh bleeding. If, however, plenty of assistance was obtainable, both operations might be done simultaneously. The question as to whether the case was one of merely a hæmatosalpinx rupturing or one of tubal gestation could only be positively decided on opening the specimen (this had not been done at the time it was shown), but he did not think a simple hæmatosalpinx if it ruptured would give rise to such a profuse loss of blood as had occurred in this case. Although Dr. Spencer objected to a diagnosis of ruptured tubal gestation having been so positively made before operation, he (Dr. Duncan) would like to know what else it was likely to be; here was a woman who had seen nothing for nine weeks, who complained of morning sickness, swelling of the breasts, pain in the lower abdomen, and an irregular discharge of blood *per vaginam*, and who was suddenly seized with all the signs of profound internal hæmorrhage. He trusted that in every case with a similar history which came under Dr. Spencer's care, if he did not diagnose ruptured tubal gestation he would at all events open the abdomen to find out the cause of the hæmorrhage. He agreed with Dr. Spencer that it was unnecessary to flush the abdomen when blood had been recently effused into it, but he was surprised to hear anyone say that flushing should never be adopted under any circumstances. Surely in those cases where a Fallopian tube full of pus or a suppurating ovarian tumour ruptured during removal, and the pus escaped all over the intestines and into the pelvic cavity, the only chance of saving the patient's life was to thoroughly and freely flush out the abdominal cavity. In conclusion, he wished to say that all the merit in the case related was undoubtedly due to Mr. Evan Jones for his accurate diagnosis and the prompt measures he took to have the operation performed, thus saving the woman's life.

Annual Meeting.

The adoption of the laws as revised was put from the Chair and passed unanimously.

The audited balance-sheet of the Treasurer (Dr. Potter) was read.

It was moved by Dr. West and seconded by Mr. Malcolm, and carried—"That the audited report of

BALANCE-SHEET OF THE OBSTETRICAL SOCIETY OF LONDON.

(Abstract of the Receipts and Expenditure for the year ending December 31st, 1893.)

1893. RECEIPTS.	£	s.	d.
To balance from 1892	118	18	11
,, (1) 611 Annual Subscriptions at £1 1s., realising . . .	641	11	1
,, (2) 1 Composition Fee at £15 15s. 15 15 0			
2 Ditto at £10 10s. 21 0 0			
7 Ditto at £5 5s. 36 15 0			
	73	10	0
,, (3) Midwives' Examination Fees . .	333	7	6
,, (4) Sale of 'Transactions' and 'Rules for Infant Management' (Longmans) 74 1 7			
Do. do. (Society) . 3 0 8			
	77	2	3
,, (5) Interest on Consols . . 48 3 4			
Ditto on Deposit . . 1 7 5			
	49	10	9
Amount of Stock, 2¾ per Cent. Consols, standing in the names of the Trustees . . . £1800 0 0			

Audited and found correct, January 25th, 1894.

(*Signed*) ALBAN DORAN.
WM. HAIG BRODIE.
W. RIVERS POLLOCK.
WALTER W. H. TATE.
PETER HORROCKS.

£1294 0 6

1893. EXPENDITURE.	£	s.	d.
By (1) 'Transactions,' Vol. XXXIV, Printing, Lithography, Paper, Binding, Index, and delivery of Volume . . .	305	18	8
,, (2) Library:			
Books Purchased . . £40 6 0			
Binding . . . 11 1 0 — 51	7	0	
,, (3) Museum and Library:			
Rent . . . 200 0 0			
Salary of Librarian . 175 0 0			
Commission on Subscriptions . . . 18 2 1			
Repairs to Furniture, Cleaning, Coals, &c. . 27 11 4 — 420	13	5	
,, (4) General Meetings and other Expenses:			
Expenses of Meetings . £30 15 11			
Stationery and Postage . 25 3 8 — 55	19	7	
,, (5) Examination of Midwives:			
Fees to Examiners . . 200 14 6			
General Expenses . . 34 3 6 — 234	18	0	
,, (6) Extraordinary Expenses:			
Casement Window . . .	15	0	0
,, (7) Banking Expenses:			
Commission, Cheque Book, &c. . .	0	11	9
,, (8) Balance as per Bank Book . .	209	12	1

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the Treasurer just read be received, adopted, and printed in the next volume of the 'Transactions.' "

The report of the Honorary Librarian (Dr. Dakin) was then read.

Dr. CHAMPNEYS moved, and Dr. SPENCER seconded—"That the report of the Honorary Librarian be received, adopted, and printed in the 'Transactions.' " This was carried.

Report of Honorary Librarian.

"The Library contains 4667 volumes, of which 203 have been added during the past year.

"131 of these volumes, including one made up of 15 tracts, have been presented to the Society, a very large proportion, 96, being the gift of Sir William Priestley.

"The books bought number 13, with 13 tracts (1 volume). The most important addition probably is Hirst and Piersol's 'Human Monstrosities,' a well-illustrated and reliable work.

"The periodicals have been bound into 58 volumes.

"W. R. DAKIN,
"*Hon. Librarian.*"

The Annual Report of the Chairman (Dr. Champneys) of the Board for the Examination of Midwives was then read.

Report of the Chairman of the Board for the Examination of Midwives.

"The number of candidates for the Society's certificate continues to increase.

"During 1893, 339 candidates applied, of whom 296 passed, 40 failed, and 3 were absent from the whole or part of the examination.

"From 1872 to 1892, 1677 candidates applied, of whom 1376 passed, 283 failed, and 18 were absent.

"In all 2016 candidates have offered themselves, of

whom 1672 have passed, 323 have failed, and 21 were absent.

"One midwife, A. A. Francis, was erased from the register by order of the Council on February 1st, 1893, having been convicted of manslaughter.

"The total number of midwives on the register at the present time (including those who passed in January, 1894) is 1749, 3 in all having been erased for misconduct.

"It will be seen that the proportion of failures in the years previous to 1893 is about 17 per cent.; in 1893 about 11 per cent.

"F. H. CHAMPNEYS."

It was moved by Dr. GERVIS, seconded by Dr. AMAND ROUTH, and carried unanimously—"That the Report of the Chairman of the Board for the Examination of Midwives be received, adopted, and printed in the 'Transactions.'"

The PRESIDENT then delivered the Annual Address.

ANNUAL ADDRESS.

In the annual address of its President the Society has been accustomed to expect a survey of its year's history from three points of view: first, its material prosperity; secondly, the work it has done; thirdly, its losses by death.

First, as to its material prosperity. I have to congratulate the Society upon an increase in the number of its Fellows. By death, resignation, and erasures we have lost 41 during the year; but we have elected 64 new Fellows, making a net gain of 23—a larger addition to the Society's Fellowship than has been the case for several years past. We now number 731 Fellows: 715 ordinary and 16 honorary.

An increase in the number of Fellows brings with it some addition to our income, and therefore improvement in our financial position. Our balance-sheet this year is better than that of last year: but this improvement is not entirely due to a larger subscription list; it has been partly brought about by the self-sacrifice of the members of the Board for the Examination of Midwives. It is a source of legitimate pride to the Society that for many years its Fellows conducted examinations for midwives without any remuneration other than the satisfaction of having acted for the public good. As soon as the Council found that it was able to remunerate those who worked at its request, this was done. In view of the unsatisfactory balance-sheet of last year, the members of the Examining Board have, in order to put the Society's finances in a sound condition, relinquished part of their honorarium.

The report of the Chairman of the Midwives Board has been read. The steady increase of applicants for the

Society's certificate shows that it is valued, and that the Society meets a public want by holding its examinations.

The report of the Honorary Librarian has informed you of the growth of our Library.

The Council has spent much time during the year in revising the laws of the Society. The revised laws have been submitted for your adoption this evening. Although the alterations are many, they do not make any important change in the practice of the Society. Most of them are verbal, aiming at greater clearness and conciseness. Those which may seem to inaugurate new modes of transacting the Society's business, in reality only formulate that which has already been its unwritten law, sanctioned either by resolutions of the Council or by custom.

The facts in our history that I have just summarised represent only the means to the great end for which we, as a Society, exist, viz. "the promotion of knowledge in all that relates to obstetrics and the diseases of women and children." I now come to the most important part of the year's record, which is, the work that we have done. I take the various subjects we have considered in the order usually followed in systematic works.

First: the physiology and pathology of pregnancy. The digestive disturbances of pregnancy stand on the border line between physiology and pathology. The morning sickness, which is a familiar symptom of pregnancy, is so common that it may be considered physiological, and yet it is often a cause of impairment of health important enough to call for treatment. The different ways in which this vomiting has been treated are innumerable, and I doubt if a treatment has ever been recommended that was not supported by cases of what appeared to be success from its use. But before we can draw any sound conclusion from what seems to be the effect of treatment upon any morbid condition, we need some knowledge as to the natural history of that condition; the causes which have set it up, and the course it is likely to run if left untreated.

Common as the sickness of pregnancy is, we have hitherto known next to nothing of the causes on which it depends, although theories, based either upon *à priori* deduction, or upon a small number of selected observations, have been plentiful enough.

At our meeting in July Dr. Giles presented to us a paper which adds some new facts to our knowledge. From an analysis of three hundred cases he showed that the proportion of pregnant women who suffer from sickness is about two thirds. He showed also that the women who suffer most from sickness during pregnancy are those who in the non-pregnant condition suffer from menstrual pain. Whether this is simply an example of a general law, that persons with unduly sensitive nervous systems are liable to many kinds of nervous disorders; that they are sensitive not only to pain but also to reflex gastric disturbances; or whether there is in these patients a peculiarity in the uterus which produces both the menstrual pain and the vomiting of pregnancy, we at present cannot tell. But our best thanks are due to Dr. Giles for the fact, although we have not yet reached its explanation. The dependence of the sickness upon general rather than local conditions is seen in another broad fact brought out by Dr. Giles, which is, that the sickness is least in those pregnancies, and at those ages, which according to the statistical tables of the late Dr. Matthews Duncan result in the largest and strongest children. The distension of the uterus by the growing ovum has been by several theorists invoked as the explanation of the vomiting of pregnancy; and it has been pointed out in opposition to this view, that the vomiting as a rule occurs before the uterus is distended, and ceases as the uterus gets larger. This objection is, I think, unanswerable when applied to the theory that the usual vomiting in the early months is due to stretching of the uterus. Dr. Giles has, however, shown us good reason for thinking that in the exceptional cases in which vomiting occurs towards the end of pregnancy it is due to distension of the uterus; for

he demonstrates that the tendency to vomiting in the later months of pregnancy increases with the size of the child.

Dr. Giles's paper not only contains these additions to our knowledge, the fruit of his own research, but an epitome (with references to the original publications) of the different theories put forth in the past to explain the vomiting of pregnancy. The paper is one which, proving as it does, by the investigation of cases, facts which were not known before, can never lose its importance.

In another paper, read to us at our meeting in June, Dr. Giles brought a venerable tradition concerning healthy pregnancy to the test of numerical record. The belief has for ages been current among women, and lingered long among doctors also, even if it be quite extinct, that women during pregnancy had "longings," and that if these longings were not gratified some harm followed. Dr. Giles has investigated this question in three hundred cases. He finds that about a third of pregnant women have, while in this condition, a craving, unusual at other times, for some article of diet, and that this craving is in most cases for fruits or vegetables. His figures thus show that the popular belief in the existence of "longings" is not without foundation, and the fact that the articles of diet which the majority of women longed for were essentially the same in nature, I think strongly suggests that the craving is nature's indication of a physiological need.

At our meetings in March, April, and June, the important subject of extra-uterine gestation was brought before us. In the text-books of twenty years ago, primary and secondary abdominal pregnancy were described as generally recognised varieties of extra-uterine pregnancy. The knowledge of these conditions possessed at that time was almost entirely gained from the dissection of dead bodies. Since then, operations on the living subject have so added to our facts, that views founded largely on the dissection of cases in which pregnancy had ended in chronic retrogressive changes have had to be reconsidered. The sur-

geon who has added most to our knowledge of the subject has expressed complete disbelief in the existence of primary abdominal pregnancy, on the ground that the digestive powers of the peritoneum are so extraordinary, that no fertilised ovum dropped into it would have a chance of surviving. Still, a number of cases have been recorded which, in the opinion of those who examined them, were instances of primary abdominal pregnancy; and most teachers have, I think, hesitated to reject, simply on the ground of *à priori* improbability, a fact which seemed supported by evidence.

This question was brought under our notice at the June meeting. Mr. Doran exhibited a specimen of a fœtus in the peritoneal cavity. He at the same time put before the Society a collection of all the cases he could find recorded in which the reporter thought the pregnancy was of the primary abdominal variety. Mr. Doran criticised each case, appraised the evidence and indicated the weak points. I think we rise from the perusal of this most laborious and valuable report able to agree with Mr. Doran in saying that the existence of primary abdominal gestation has not hitherto been proved; that in every case that has been thought to prove it, the evidence is insufficient to establish the fact. Mr. Doran has said the latest word on the subject, and the question will stand as he has left it until some new and more convincing evidence is put before the profession.

Ectopic pregnancy occupied us also at the April meeting; but the part of the subject then considered was the operative treatment of advanced extra-uterine gestation. Papers by Dr. Cullingworth, Dr. John Phillips, and Mr. Sinclair Stevenson were read. These papers were clinical records of cases under the care of their respective authors. Dr. Cullingworth successfully removed the fœtus and placenta four weeks after the death of the fœtus at eight months' pregnancy; and Dr. Phillips did the same thing two and a half months after the death of the fœtus at six months' pregnancy. Mr. Stevenson in one of his cases was

about to operate a week after the death of the fœtus, but the patient died before he could do so. In another case albuminuria developed near full term; Mr. Stevenson operated, and delivered a living child. The operation was a remarkable instance of boldness and promptness. The gestation was sub-peritoneo-pelvic, the placenta being situated in a hernia-like protrusion of the broad ligament. In extracting the fœtus the sac was torn, and the hæmorrhage was terrific. Mr. Stevenson pulled the sac up, ligatured it below the placenta with india-rubber tubing, and fixed it outside. The patient recovered without a bad symptom. The discussion on these papers elicited accounts of other cases in the practice of different Fellows, which it is to be hoped may one day be more fully put on record. It is only by the accumulation of carefully reported cases, such as those to which I have referred, that we can learn to treat similar cases rightly.

The later results of extra-uterine pregnancy were illustrated by a specimen shown to us in March by Dr. E. J. Maclean. This case ended in death of the fœtus at about the fifth month of pregnancy, and the subsequent death of the mother after two years' continual illness.

We have been indebted to Dr. Rasch for the opportunity of convincing ourselves of the reality of one of the most remarkable therapeutic discoveries of modern times, viz. the cure of osteo-malacia by the removal of the ovaries. Many instances of this inexplicable but unquestionable fact have been reported by operators who practise in places where this disease is endemic; but Dr. Rasch's case is, I believe, the first in England. Dr. Rasch brought the patient to our meeting in December, 1892, and she was subsequently examined by a committee appointed by that meeting, who reported to us in February, so that there can be no question in this case of the completeness of the cure.

Four contributions to teratology have been put before us. In February we had the report of a committee appointed in December to examine a specimen exhibited by Dr. Amand Routh. The careful dissection made showed

ectopia viscerum, with retroflexion of the vertebral column, and a remarkable deformity of the pelvic viscera, the result (1) of non-development of the normal cloacal orifice, (2) persistent communication of the bowel with the allantoic cavity, and (3) consequent formation of a vesical anus.

Two specimens of anencephalus have been shown to us, one by Dr. Amand Routh in June, and one by Dr. Stanley Ballance in July. Both have been carefully dissected. Although there was no defect in the spinal bony canal, the canal of the spinal cord in each case was dilated, and in each case the supra-renal bodies were very small, a fact the frequency of which was pointed out in the discussion by Dr. Herbert Spencer. It seems to me probable that the co-existence of the spinal cord disease and the smallness of the adrenals may be more than coincidence, for Charcot has pointed out the frequency of hæmorrhage into the supra-renal bodies in myelitis. In October, Dr. Eden exhibited to us a fœtus the subject of spina bifida, which he had dissected. The case had another point of interest, which was that the mother had suffered during pregnancy from hydrorrhœa gravidarum.

It is to be wished that Fellows of the Society generally would bear in mind that the best possible use that can be made of any kind of monstrous birth is to send it to this Society for examination.

The diseases of pregnancy which lead to abortion have been illustrated by a blighted embryo exhibited by Dr. Remfry at our April meeting. In this specimen there was reason to think that the chorion had gone on developing although the embryo had died. Dr. Griffith showed in February a specimen of abortion in which it appeared as if the placental site was below the decidual cavity, and that, had the pregnancy gone on, the placenta would have been prævia. The clinical history of placenta prævia at a later stage was illustrated by specimens shown by Dr. Herbert Spencer and Dr. Pollock. These two cases were alike in the clinical point that delivery was accelerated by tearing through the placenta in order

to extract the fœtus. The results were good so far as the mothers were concerned, and in Dr. Spencer's case, one of triplets, the children were born living; thus showing that this mode of delivery does not necessarily involve fœtal death. Dr. Muir exhibited at our October meeting a placenta from a case of accidental hæmorrhage, which showed how the placenta had been detached by successive hæmorrhages at different dates.

It seems to me that in such cases what we most want is information as to the state of the decidua. The old theories of the mechanical causation of placenta prævia and accidental hæmorrhage seem to me unsatisfactory. The production of abnormal situation, and abnormally easy detachment, of the placenta by decidual disease is quite easy to understand. Disease of the decidua co-existing with placenta prævia has been described; but before we can accept as types isolated cases of decidual disease along with placental abnormalities we need examination of a large number of cases. Repeated abortion also appears to me to be more reasonably explained by disease of the decidua than by any other local cause.

We have only had one communication relating to practical midwifery, beside the placenta prævia cases to which I have referred; but that one is an important one. Dr. Lewers brought before us in October the first patient upon whom symphysiotomy has been performed in this country; and the Fellows present had the opportunity of satisfying themselves as to the patient's undiminished power of locomotion.

The subject which we discussed in December is one of the greatest importance to practitioners in midwifery, although its range of utility is so wide that we can hardly claim it as belonging to obstetrics. Dr. Horrocks described to us the method of injecting saline fluid into veins, and related cases affording convincing evidence of its value. By this method we get not only all the good effect of transfusion of blood, but a far greater effect, and we avoid the chief dangers of the old method. Dr. Spencer

exhibited his ingenious contrivances for securing the absolute purity of the fluid injected. The utility and safety of this method of rallying patients from collapse after severe hæmorrhage has now, I think, received sufficient testimony from competent persons to take its place as a mode of treatment which every one who enters on midwifery practice ought to be ready to use. It may be useful to remember that Dr. Horrocks was induced, as he told us in his paper, to try the effect of the intra-venous injection of quantities of saline fluid much larger than years ago would have been thought safe, by the late Dr. Wooldridge, and that Wooldridge's conclusions on the subject were reached by vivisection. It may be said that if Wooldridge had not experimented on dogs, the benefits of this mode of treatment would in time have been gradually found out by experiments on human beings. This may be so, but it is by virtue of experiments on animals, so unwisely hindered by our legislature, that we to-day can use this mode of treatment with confidence.

Our volume of 'Transactions' for last year contains three papers on the puerperal state: one relating to its physiology, two to its pathology. The first, a paper by Dr. Giles, on the lochia, has supplied a definite want in our knowledge of that subject. It is remarkable, considering the amount of labour and ability that has been given to many small points in the physiology of the puerperal state, that it should have been left for Dr. Giles, in 1893, to ascertain the average quantity of the lochial discharge. The statements on this point in our text-books are all based on a paper by Gassner. Now Gassner only measured the quantity of the lochia in two patients—a small foundation on which to base general statements. It now appears that in these two patients the quantity of the lochia was much in excess of the average. Gassner's estimate was that the average amount of lochial discharge is 52 ounces. The quantity lost at an ordinary menstruation is believed to be from 2 to 6 ounces. According to Gassner, therefore, the quantity of the lochial discharge

is at least ten times as much as that of ordinary menstruation. A monthly nurse, if told that the amount lost by a lying-in woman was ten times that lost at a monthly period, would, I think, say that it was a mistake. Giles's estimate, 10½ ounces, or between two and three times as much as at a menstruation, is consonant with the experience of women. His statement is based, not like Gassner's upon two cases, but upon sixty-four. One of his cases had an amount of discharge a little in excess of Gassner's estimate, and in this case there was a retained bit of placenta. In no other case did the discharge reach half the amount observed by Gassner. Giles attributed the discrepancy to the use, in his cases, of vaginal douching, and so did others in the discussion. Some, indeed, seemed to think that the use of douches invalidated Giles's observations as representative of natural lying-in. The douches may have made some trifling difference, but to my mind it is clear that the cause of the discrepancy between the conclusion of Gassner and that of Giles is that Gassner measured two exceptional cases, while Giles took a number large enough to prevent one exceptional case from greatly affecting the result. Giles's results are in harmony with the rough impressions of daily experience, while Gassner's are not.

At our October meeting Dr. Boxall submitted to us a part of the splendid contribution to the knowledge of puerperal diseases which he is putting before the profession in instalments ; the slow appearance of which is due to its magnitude. A family tree that was begun with the founders of the house, and then had the names of successive children entered on it as they arrived, carries greater conviction of its authenticity with it than one that began with the children, and found out their supposed pedigree by inquiry into the past. Most theories as to the origin of puerperal disease have been constructed according to the latter method, beginning with the disease and then extending inquiry back for its supposed causes. Boxall, on the contrary, begins with the parents, that is,

with the conditions supposed to cause disease, and then traces the offspring, that is, the kind and amount of illness produced. In former papers he has shown us, as I think in an incontrovertible manner—(1) The influence of the scarlet fever poison on lying-in women, and (2) The influence of antiseptics and general hygienic measures. In this paper which we heard in October we were instructed as to the effect of external meteorological conditions. Dr. Boxall demonstrated that the death-rate from puerperal fever, and also the amount of septic illness in childbed, is greater during the winter than during the summer months; that although more prevalent, septic illness is of less severity in winter than in summer; that febrile illness during the lying-in not due to septic causes is more prevalent in summer than in winter, but shows no difference in severity according to season. Dr. Boxall contented himself with marshalling the evidence in favour of these broad facts, and refrained from speculating as to their explanation. That evidence consists of statistical tables, the compilation of which must have involved the examination of enormous masses of detail. These tables Dr. Boxall put in the form of diagrammatic charts, constructed with great ingenuity, so as to enable the reader to take in at a glance the import of the numerical tables.

At our meeting in November we had before us a paper by Dr. Braxton Hicks, entitled "A Further Contribution to our Knowledge of Puerperal Diseases." This was a clinical record of cases, not written to support any theory, but rather because, as every theory must stand or fall by its relation to clinical facts, the accumulation of facts must precede final conclusions. Dr. Hicks related cases illustrating modes of production and propagation of puerperal fever. This paper, and the discussion which followed it, will, it is to be hoped, help to impress upon those engaged in midwifery practice the safety conferred by antiseptics, and the danger of omitting their use.

The diseases of women apart from pregnancy have come

before us during the year, chiefly by way of the exhibition of specimens and the relation of the cases furnishing the specimens. We have only had two papers of larger scope than this, and for both of these we have had to thank the industry of Mr. Doran. At our meeting in April he put before us an exhaustive examination of a practical matter. Of all the details upon which the success of ovariotomy depends, there is nothing more important than the securing of the pedicle; and by common consent the ligature is the most trustworthy way of securing it. This granted, the choice of the best material for ligature, and of the best knot; and the various accidents that may possibly happen when a ligature is used, become matters of high importance. These points were discussed by Mr. Doran in his paper, in the light both of large personal experience and of laborious examination of the experience of others. I need not attempt to epitomise the information it gives; it is enough to say that it is a paper which no one can read without being instructed.

Two interesting specimens of ovarian disease have been exhibited to us. One was shown in February by Mr. Malcolm. It was a case of non-malignant papilloma springing from a small piece of an ovary left behind eleven years before at an operation at the time supposed to have been a complete double ovariotomy. This case presented an additional feature of interest. It afforded another demonstration of a fact to which years ago the late Dr. Matthews Duncan drew attention, viz. that peritoneal adhesions sometimes completely disappear. In this case, after the first operation drainage was used, the discharge was offensive, and the wound did not heal till the escape of some ligatures several weeks afterwards. Nevertheless at the second operation, eleven years afterwards, not a sign of an adhesion anywhere was present. Another specimen was shown at the November meeting by Dr. Eden, which exemplified a rare transition form between malignant and non-malignant ovarian tumours. It was an ordinary ovarian cyst with a small nodule of sarco-

matous growth in its wall; as Dr. Eden put it, "a tumour just overstepping the borders of malignancy."

At our meeting in June we had again to thank Mr. Doran for a paper of the highest scientific value. He brought before us the question of the spontaneous cure of uterine fibroids by absorption. He related a case which he had watched, and in which he was sure that a fibroid had been present and had been absorbed. He collected in this paper a number of published cases in which a similar event had been fully reported by other observers. He classified these cases according to the different circumstances in which the absorption had taken place. Any subsequent worker who wishes to judge for himself of the strength of the evidence that fibroids are sometimes spontaneously removed by absorption, will find in Mr. Doran's paper that evidence in a compendious form, together with the opinion of an acute critic and experienced observer as to the value of each piece of evidence quoted. The question is not one of merely pathological importance; for during the last few years we have heard much of the power of electricity in making these tumours disappear. Mr. Doran's paper teaches us that if this happens, it does not follow that it is due to the electricity.

Specimens have been exhibited illustrating other points in the natural history of uterine fibroids. Dr. Cullingworth showed at our February meeting a large rapidly-growing œdematous fibroid of the uterus; Dr. Hayes, in May, a similar specimen; Dr. Boxall, in November, a soft rapidly-growing fibro-myoma of the broad ligament. Neither of these patients had reached the menopause. Dr. Handfield-Jones brought under our notice in June a growth of the broad ligament which was described as a "simple fibro-myoma," and had been growing rapidly during the last six months, the menopause having occurred three years previously. In view of the statements made by Mr. Lawson Tait as to the differences between soft fibroids and the white nodular variety—that the soft tumours grow after the menopause and are not cured by removal

of the ovaries, while the reverse is true of the hard white tumours—we want all the information we can get illustrating the life-history of these growths. Dr. Griffith, in February, showed a large fibroid cured by spontaneous extrusion through the vagina. Dr. Routh, in November, showed a fibroid spontaneously enucleated, which was referred to a committee, the report of which will appear in the volume for 1894. Dr. Lediard, in July, exhibited a sessile fibro-myoma from the supra-vaginal portion of the cervix which he had removed by abdominal section, simply enucleating the tumour from its bed and tying the vessels.

Two communications illustrating diseases of the Fallopian tube have been made to us. A paper was read at our meeting in May in which Dr. Lawford Knaggs related a case of hæmatosalpinx. The fact that this condition was present was placed beyond doubt by opening the abdomen. The main peculiarity of the case was that the patient before the operation had repeatedly had sudden unexpected discharges of a large quantity of decomposing blood. Dr. Knaggs thought these discharges were due to the distended tube emptying itself into the uterus, and he gave in his paper good reasons for this belief. Another point of interest in the case was that it seemed to be quite independent of pregnancy. The rarity of such cases and the closeness with which this one was observed make it one of great interest. The other contribution to our knowledge of tubal disease was a specimen of hydrosalpinx shown at our meeting in November by Dr. Hayes, with a brief clinical history, which it is to be hoped Dr. Hayes will at a future time make complete.

To complete the tale of our work during the year, I have only to mention two cases of vesical calculus, one brought before us in May by Dr. Hayes, and the other in June by Dr. Amand Routh. One was formed round a hairpin, the other round a bodkin. In one case ulceration of the bladder opening into the vagina had been produced. Both cases were easily cured.

Looking back over the year, I think the Society is to be congratulated upon the amount and the quality of the work that has been put before it. I doubt if in any year of the Society's existence it has produced a volume of 'Transactions' richer in contributions of the character which will stand the test of time.

I come now to that part of the President's duty which consists in acknowledging the debt which we cannot pay, our debt to the dead. Shakespeare's words—

> "The evil that men do lives after them,
> The good is oft interred with their bones"—

seem to me, as applied to scientific matters, to be the reverse of the truth. For all good scientific work lives and bears fruit long after he who did it has passed away, while all else is quickly forgotten.

We have lost by death ten Fellows during the year 1893, and some of them had done work which powerfully influenced the practice of their day. I take them in the chronological order of their deaths.

Dr. Featherstone Phibbs, of Elgin Avenue, died on January 15th, 1893, aged forty-four. He was educated at King's College Hospital, and became a Member of the Royal College of Surgeons in 1875, and a Licentiate of the Royal College of Physicians of Edinburgh, and Licentiate in Midwifery, in the same year. In 1879 he became a Member of the latter body. In the same year he became a Fellow of this Society. He afterwards was appointed Physician to the Infirmary for Consumption in Margaret Street. He published a report of a case in which a patient lived for two months without any sustenance but alcohol; a case which in his opinion proved the value of alcohol as a food.

Mr. Robert James Hutton, of Stroud Green, was educated at St. Bartholomew's Hospital. He became a Member of the Royal College of Surgeons in 1869, and a Licentiate of the Royal College of Physicians of Edinburgh, and Licentiate in Midwifery, in the same year.

He became a Fellow of this Society in 1882. He seems to have taken some interest in anthropology, for he was a Member of the Anthropological Institute. He was at one time a Member of the Honorary Staff of the Holloway and North Islington Dispensary. He died on February 12th, 1893.

Dr. Henry Candlish, of Ayr, was educated at the University of Glasgow. He took prizes as a student, and graduated M.D. in 1858 "with commendation." In the same year he was admitted a Licentiate of the Faculty of Physicians and Surgeons of Glasgow. In 1860 he went to Alnwick as House Surgeon to the Alnwick Infirmary, which post he held for three years and a half. On retiring from it he received a written expression of the high esteem in which he was held by the governing body. He then commenced practice in Alnwick. He was admitted a Fellow of this Society in 1861. He was for twelve years Medical Officer to the Workhouse, District Medical Officer and Public Vaccinator, and for several years Medical Officer of Health. He sent occasional contributions to the medical journals. He died on March 18th, 1893.

Dr. William Hope, of Curzon Street, Mayfair, died on March 27th, 1893. He received his professional education at St. George's Hospital, becoming qualified to practice in 1861. He was appointed Assistant House Surgeon and then House Surgeon to his hospital, and afterwards studied in Paris. He travelled for some time in charge of a patient entrusted to his care by Dr. Brodie. He then graduated at the University of Aberdeen, taking his M.B. degree in 1868, and M.D. in 1870. In 1869 he became a Member of the Royal College of Physicians. In 1872 he was admitted a Fellow of this Society.

For some time he was Senior Obstetric Assistant at St. Bartholomew's Hospital, taking charge of the out-patient and maternity departments under the supervision of the late Dr. Greenhalgh. He was also for a time Physician-Accoucheur to the St. George's, Hanover Square, Dispensary. He served for some years on the active staff of

the Belgrave Hospital for Children, and at the time of his death was Consulting Physician to that institution. He was for many years on the Staff of Queen Charlotte's Hospital, first in charge of out-patients, then of in-patients. He took a warm interest in the training of nurses and midwives, and gave much labour to this end at Queen Charlotte's Hospital.

Dr. Hope was a man of modest and retiring disposition; he might even have been called diffident. Probably from this cause he wrote little, his published works consisting only of a few reports of cases. His chief interest was in theology rather than in medicine. He was a man of culture and refinement, and was much beloved by those who had the privilege of his friendship.

Mr. Key Hardey, of Wardrobe Place, Doctors' Commons, E.C., died on May 18th, 1893, aged seventy-eight. He came of an old Cheshire family, and was born at Toddington, in Bedfordshire. He was apprenticed according to the old-fashioned plan, and then studied his profession at St. Bartholomew's Hospital. He became a Member of the Royal College of Surgeons in 1851, and was then for a time Assistant Medical Officer to the Junior School of Christ's Hospital. He settled in the Castle Baynard Ward of the City of London forty years ago, and practised there for the remainder of his life. He became a Fellow of this Society in 1860. He was Medical Officer to the Provident Association of Warehousemen, Travellers, and Clerks. He was also Surgeon to the West City Dispensary. His energy in the discharge of social duties is evidenced by the fact that he was an active Freemason, and was for twenty-four years a churchwarden. He is described as having been a man of powerful physique and strong will, of genial and kindly disposition, hospitable and generous.

Dr. Dennis Sidney Downes, of Moreton Villa, Kentish Town, died on August 2nd, 1893, aged fifty. He was born at Limerick, and was a nephew of the Very Reverend Dr. Downes, Vicar-General of the Diocese. He was edu-

cated at the Catholic University, Dublin, and became a Licentiate of the Royal College of Surgeons in Ireland in 1862, and of the Royal College of Physicians of Ireland, and Licentiate in Midwifery, in 1863. He came to London when a young man. He was admitted a Fellow of this Society in 1880. He was Surgeon to the Camden Town Dispensary, Honorary Surgeon to the Governesses' Asylum, and Divisional Surgeon to the Police, the band of which accompanied his funeral procession, at which an unusual concourse of mourners testified to the esteem in which he was held.

Dr. William Morse Graily Hewitt was born at Badbury, Wilts, in 1828. His preliminary education was at the College School of Gloucester. At the age of seventeen he became the pupil of Mr. H. Burford Norman. In 1846 he matriculated at the University of London, taking honours in chemistry, and in October of that year he entered as a medical student at University College. His career as a student was a most brilliant one; he won many academical distinctions, both at his hospital and at the University of London. He became qualified to practice in 1850. In this year he went to Paris, and attended the clinique of Trousseau. A commission in the army was about this time offered him, and he passed an examination for it, but went no further. In 1852 he commenced practice at Radnor Place, Gloucester Square, and in 1853 he married. In 1855 he took his M.D. degree, and in 1856 became a Member of the Royal College of Physicians. After commencing practice he still continued to study pathology and clinical medicine at University College Hospital, St. Mary's Hospital, and the Marylebone Infirmary. In 1855 he was appointed Surgical Registrar to St. Mary's Hospital, and while holding this office he published reports of cases of fractured spine ('Lancet,' 1855, vol. i), of perforation of the small intestine, and of calculi removed by lithotrity. He soon turned from surgery; first to diseases of children, and then to that which was to be the main work of his life. During 1854 and 1855 he closely watched an epidemic of

hooping-cough at the St. Marylebone Infirmary, and in 1855 read a paper upon it before the Harveian Society, which was afterwards published as a small volume of thirty-nine pages. At this time he seems to have given great attention to the diseases of children, for the 'Lancet' about this time contains some papers from his pen which display the characteristic excellencies of his mode of work. He wrote "On Infantile Jaundice" ('Lancet,' 1856, vol. ii, p. 8); "On a case of Bronchial Phthisis in a Child, with Remarks on the Diagnosis and Prognosis of that Affection" (ibid., p. 484); "On the Lungs of Children dying from Hooping Cough" (ibid., p. 200, and in the 'Transactions of the Pathological Society'); "On Acute Tubercular Peritonitis" ('Lancet,' 1857, vol. i, p. 29); "On Bronchitis and Apneumatosis" (ibid., p. 625); and others on similar subjects. These papers are each based either on one case or on a small number of cases, investigated most thoroughly and systematically, and fully and exactly reported. Hewitt pondered over his cases, sought out and studied all the literature relating to them which was accessible to him, and produced a logical, complete, and coherent explanation of those striking or unusual features of the disease which he thought demanded attention, in language always accurate and carefully weighed.

In 1856 Dr. Hewitt obtained the Lectureship on Comparative Anatomy at St. Mary's Hospital. In 1858 he was appointed Physician to the Samaritan Hospital, and in 1859 to the British Lying-in Hospital. In 1860 he undertook the duties of Joint Lecturer on Midwifery at St. Mary's Hospital Medical School along with the late Dr. Tyler Smith; and in 1864 he became Assistant Physician-Accoucheur to the Hospital. In 1861 he purchased the lease of Dr. Rigby's house at 36, Berkeley Square, and removed thence from Radnor Place, and in this house he practised throughout the rest of his professional career.

In 1858 Dr. Hewitt was associated with Dr. Tyler Smith

in the foundation of this Society. He was its first Secretary; and its successful start was due very largely to his energy, courtesy, and prudence. I have no doubt whatever that he himself regarded this as one of the greatest and best things that he had done; and it is without doubt the most permanent, for his writings, like all those that belong to a stage in a progressive science, must in time be superseded by others embodying new knowledge. But the life of the Society that Hewitt helped to found outlasts that of the individuals who compose it; its corporate life and its corporate usefulness will continue and grow, fulfilling in larger and larger measure the wish of its founders, long after they and their writings have ceased to interest any but the medical historian. Dr. Hewitt was Secretary from 1859 to 1864; Treasurer in 1865 and 1866; Vice-President in 1867 and 1868, and President in 1869 and 1870. He contributed twenty-one papers to our 'Transactions,' beside many reports on specimens.

Hewitt's high motives in helping to found this Society will be appreciated if I recall his own views as to the functions and utility of such a Society. There were four things he thought this Society should do—teaching, recording, discussing, and uniting.

1. On its teaching function he laid especial stress. He said, "As a school of obstetric medicine it has exercised, and will continue to exercise, a powerful influence. The teaching of the Society I cannot but regard as one of its most important functions."*

Referring again to this subject he said: "This Society exists, not simply for the purpose of discovering new facts and new principles; it has another function, and one not likely soon to cease, viz., the dissemination of these principles; in other words, the education of the rising generation of practitioners. This Society is eminently a teaching Society, offering opportunities for that correction and verification of experience which is so invaluable to

* Inaugural Address, 'Transactions,' vol. xi.

those whose experience is limited; upholding also what is right, and exercising a wholesome influence on the entire body of obstetric practitioners."*

2. As to recording Dr. Hewitt wrote: "We have become, as the 'Transactions' will testify, the depository of the carefully obtained experience of eminent observers in, it may truly be said, all parts of the world."†

3. On discussion he said: "The discussions which have taken place at our meetings have contributed, we cannot say how much, to the mutual improvement of those who have taken part in them, to the dissipation of prejudice and the discovery of truth."†

4. As to union Dr. Hewitt's words upon the Society were: "It has formed a centre and bond of union for obstetric practitioners throughout the country."*

I think that in these sentences Dr. Hewitt well described what should be the objects of our Society. We want them all, discussion as well as publication, and for publication not scientific novelties only, but anything likely to help Fellows of the Society in their daily work. I cannot pass the last-quoted sentence without remarking that at the time Dr. Hewitt wrote it, the Society was eleven years old, and numbered about 600 Fellows. It is now thirty-four years old, and we have only 731 Fellows. It is as yet "a centre and bond of union" only for a small number of obstetric practitioners throughout the country; and the continued activity of Fellows of the Society in inducing others to unite with us is much needed.

Dr. Hewitt's first paper in the department of medical science which he made his own was "On the Coagula formed in the Veins during the Puerperal State." This was published in the 'Lancet' of 1858. It is not a report of cases, but a careful digest and clear presentation of the work of Virchow and others upon the subject. The first paper he read before this Society was upon the vesicular mole. In

* Annual Address, 'Transactions,' vol. xii.

† Inaugural Address, 'Transactions,' vol. xi.

it he questioned the opinion of Virchow that in this condition the disease of the chorion caused the death of the fœtus, and he urged that the chorionic degeneration was subsequent to fœtal death.

Dr. Hewitt's well-known work on the pathology, diagnosis, and treatment of the diseases of women appeared in 1863. The first edition he described as mainly a summary and criticism of the then existing knowledge ; it was chiefly remarkable for its novel arrangement, the book being divided into two parts, the first treating of diagnosis, the second of treatment. Pathology was not discussed. Dr. Hewitt was appointed Professor of Midwifery in University College, London, and Obstetric Physician to University College Hospital, in succession to the late Dr. Murphy, in 1865. In 1866 he was elected a Fellow of the Royal College of Physicians. The second edition of his book appeared in 1868 ; its arrangement was modified, pathology was introduced, and it was illustrated. In 1872 appeared the third edition, in which he fully enunciated the views upon uterine pathology with which his name was associated. In 1878 he delivered the Harveian Lectures, in which he more fully expounded those views under the title of " The Mechanical System of Uterine Pathology." The fourth edition of his book was published in 1882, and differed from its predecessors mainly in containing Hewitt's views as to mal-nutrition as a cause of uterine disease.

Dr. Hewitt resigned his appointments as Professor of Midwifery at University College and Obstetric Physician to the Hospital in 1886, and was then made Emeritus Professor. His last important communication to medicine was in 1892, when he wrote a paper on sea-sickness, detailing experiments which showed that sickness might be produced by disturbed visual sensations.

I have enumerated only a small part of the work that he did. Although his theories upon uterine displacements were the most novel and the most distinctive of the work that he did, yet he was far from confining his attention to this subject. It is only necessary to turn over the leaves

of our 'Transactions' to find out that there were few subjects embraced under the head of obstetrics and gynæcology, in discussion upon which Dr. Hewitt had not something worth hearing to say.

Dr. Hewitt was known all over the world as the originator and upholder of certain views as to the pathological importance of alterations in the shape and position of the uterus, which he regarded as morbid, and which he believed to be, directly or indirectly, the great cause of most of the minor derangements of health peculiar to women. These views were much criticised. They cannot be said to be universally accepted. They are fully accepted by few, if by any; and by some they are not accepted at all. This is not the occasion for discussing their pathological correctness. But I shall occasion no controversy if I say this, that Dr. Hewitt's writings caused a great deal more attention to be given to uterine displacements by gynæcologists all over the civilised world than had been the case before. He urged his views with an ability that impressed the reader, and a temperateness of statement that gave weight to his judgment. Even one who does not accept all his opinions may derive instruction from his accurate descriptions of conditions some of which are admitted to be abnormal, and from his clear and cautious recommendations as to treatment. I venture to predict that his later writings, in which he drew attention to the dependence of displacement on conditions of the general health, are destined to receive more consideration than they have yet done. Not only was his work able and valuable in itself, but his theories, by the antagonism they provoked, became the parent of other investigations, by which our knowledge of the conditions they referred to has been made more complete and accurate than it was before.

His mode of advocating his opinions was altogether admirable. We, as Englishmen, are proud of the method by which justice is done in our law courts. First one advocate urges one side of a case, and then another puts forward

the opposite. In the conflict of the two error and falsehood are exposed and destroyed, and truth stands out as that which alone can survive the double attack. In medical science we get at the truth in much the same way, except that the disputants aim higher than at setting out only one side. Each tries to state the whole truth. But the phenomena of disease and its cure are so complex, that no one ever attains this. The forensic advocate deals only with a small body of evidence strictly limited by the forms of law. But he who tries to sum up a medical question finds that the facts he has to deal with are infinite in number—they are continually being added to, and things once supposed to be indisputable shown to be incorrect. Hence in our science the most scrupulous efforts to state the truth become only statements of that side of it which the writer perceives. All that a writer on clinical subjects can do is to observe as accurately, and set forth what he thinks he sees as clearly, as he can; knowing that truth will be served by setting forth one side well, even though considerations of a different kind should afterwards be shown to be more important. Dr. Hewitt did this in a manner which was a model for all of us. Even the most strenuous opponent of Hewitt's opinions must, I think, admit this; that in stating them, and urging their adoption, Hewitt never went one jot or tittle beyond the evidence he had. He never exaggerated, never made sweeping general statements in which exceptions to rule were ignored, never concealed the weak points in his case or the defects in the evidence. He was not only courteous to his opponents, but he was just. He never misrepresented them, never answered arguments with adjectives, never attributed low motives. No one could study his writings or hear him speak without feeling certain that Hewitt was himself entirely convinced that his theories were right, and that it was from pure love of truth that he wished to see them generally accepted. From the very beginning of his career his care to be strictly accurate in his facts was conspicuous. In his

private practice, I learn from those who knew him better than I did, he was just as careful neither to fall short of nor go beyond the truth in his statements to patients. How admirable an example he set may be illustrated by a small incident, told me by one of his former residents, which I mention, not as being wonderful, but as characteristic of Dr. Hewitt. He asked his resident to help him to remove a polypus from a private patient. When he came to examine the patient he found the polypus had vanished. Hewitt made no attempt to explain it, but told the patient that he had made a mistake, and that he supposed that she had had a miscarriage.

He is described by a biographer who knew him well as "a true-hearted man, and a loving friend with a noble nature." He suffered much from ill-health; from hæmaturia in his early life, from emphysema and bronchitis later on. He died from uræmia, on August 27th, 1893, aged sixty-five.

Dr. Frederick Hall, of Leeds, was the third son of John Herbert Lewis Hall, a surveyor and a native of the Scilly Islands. He was born at Tynyrhyd in Cardiganshire on April 2nd, 1837. He was educated at the Friars' Grammar School at Bangor, and apprenticed to Dr. Richards of the same place. He then entered the Leeds School of Medicine, bringing with him a eulogistic letter from the late Dean Cotton, who, being perfectly blind, wrote that he had had his eye upon Hall for a long time. Mr. Hall became M.R.C.S. in 1858 and L.S.A. in 1860. After qualifying he became Resident at the Northern Dispensary, Liverpool, and then was for three years Resident at the Leeds Fever Hospital. He commenced general practice in Leeds in 1864, was surgeon to a poor law district and public vaccinator, and also had charge for many years of the Smallpox Hospital. He published a report of cases treated in this hospital from 1872 to 1878, in which he demonstrated that the mortality in smallpox was governed by the number and character of the vaccination cicatrices. His interest in

obstetrics, his professional zeal, and the confidence placed in him by his professional brethren are shown by the fact that he was Secretary to the Obstetrical Section of the British Medical Association at its meeting in Leeds, an appointment made chiefly on account of his personal characteristics. He is described as having been a capital man of business and a delightful companion. He died from renal disease on September 27th, 1893.

Dr. Charles Clay was the second son of Mr. Joseph Clay, a miller and corn dealer of Stockport, Cheshire, and was born on December 27th, 1801. Owing to the illness of his mother, he was brought up by a paternal aunt until the age of twelve. His absence from home during the early years of his life prevented him from feeling the influence of family ties during boyhood so much as might otherwise have been the case, and led to habits of independence, boldness, and self-reliance unusual in the early years of life. When his school days were over he was apprenticed to Mr. Kinder Wood of Manchester. While with Mr. Wood he read much, attended more than five hundred cases of labour, and assisted his teacher by making diagrams and dissections for his midwifery lectures. When his apprenticeship was over, he was sent, by Mr. Wood's advice, to the University of Edinburgh. He became qualified to practise in 1823. In the same year he married, and started in general practice in Ashton-under-Lyne. He remained there for sixteen years. During this period he had three children, all of whom died young, and then his wife also died. In his early years he was very active as a Radical politician, and edited the 'Ashton Reformer;' but for the last fifty years of his life he described himself as "Tory to the backbone."

While at Ashton he took a great interest in geology, and wrote a book called "Geological Sketches and Observations on Fossil Vegetable Remains, &c., from the South Lancashire Coal-fields."

Dr. Charles Clay's first published paper on a medical subject is said to have appeared in 1823, and to have been

on the use of ergot of rye. In different biographies of him, this paper is variously referred to as having been published in the 'Edinburgh Medical and Surgical Journal,' the 'Medico-Chirurgical Magazine,' and the 'London Medical and Physical Journal.' None of these papers contain anything with Clay's name, or if they do it is not indexed. The last mentioned of them contains an anonymous summary of an article on ergot by Dr. Stearns of New York, and it is possible that this anonymous abridgment may have been Clay's maiden effort in literature.

In 1839 he removed to Manchester, and with his removal began that part of his career which is of chief interest to the historian of surgery. In 1842 he performed his first ovariotomy. At that time McDowell and his followers had performed in America less than a score of these operations. About ten successful cases had been published in England by different provincial surgeons. Lizars in Edinburgh had had so little success that he had not persevered with it. No one had successfully performed the operation in London. It showed a grasp of surgical principles, and a boldness in acting on them, of no common order, for a general practitioner who had no hospital, or official position of any kind, to commence the systematic performance of a novel operation of great magnitude. When we remember also that this operation was at that time discountenanced by the leading surgical teachers of the day; that the only experience to which Clay could point in support of his hopes of success was that of an operator in a distant country, whose reports of his practice were not at that time received with unqualified confidence (for the state of American journalism was at that time very different from what it is at present, and probably on this account the credibility of McDowell's statements was at one time denied); and that, other than McDowell's experience, there had only been some isolated cases, so few in number that they were looked on by most as happy accidents; when it is added, further, that Clay modified the operation in a way which, in the view of most of his contemporaries,

added to its danger, although we now know that his reasons for doing so were in accordance with sound surgical principles,—when we remember all this, our admiration for his ability and courage is increased.

Clay claimed the credit of having been the first to operate by the long incision. He says (I quote his own words, although his English is less admirable than his surgery), "My experience sets a much greater value on having a bold and large incision through the integuments, at once affording plenty of room for every manipulation, aided by the eye, than to require a subsequent enlargement, or to drag cysts or solid masses through small openings without a knowledge of what attachments may possibly exist behind, unseen, unfelt by the finger, and the mischief that might arise in consequence of such proceedings" ('Obstet. Trans.,' vol. v, p. 61). We now know that a long incision is only needed in exceptional cases, and in such cases we make it without hesitation; but in 1842 it was the general opinion that a long incision added much to the risk, and it needed clear judgment to see, and courage to act on that judgment, that there was greater danger in manipulating without the aid of sight than in extending the incision.

Dr. Clay went on operating from 1842 onwards. Although not the first to perform ovariotomy, he was yet the first person who operated on a large series of cases, and the first to show by a sufficient number of cases that the operation could be done with an average mortality quite low enough to justify its performance to cure a disease which without it was invariably fatal. To him, therefore, the epithet of the "Father of Ovariotomy" in Europe rightly belongs. In 1848 he published in his magazine, of which I shall speak presently, a series of 40 abdominal sections, 33 of them for ovarian tumours. In 1863 he read a paper before this Society in which he gave an account of 108 cases of ovariotomy, 74 of them successful. In the 'Lancet' of 1865 he wrote a paper in which he gave the result of 111 cases of ovariotomy, 77 of them

successful. It is interesting to note, as exemplifying the extreme difficulty of correct inference in matters of therapeutics, that Clay regarded three things as essential to success : (1) the long incision ; (2) the opening of the bowels by ox-gall before and after the operation ; and (3) the maintenance of a proper temperature of the room during the operation. In the last point he followed Lizars.

Clay was not only the first great ovariotomist, but he was one of the first to perform hysterectomy, and the first in the British Empire to perform it successfully. He might also, I think, have taken credit for being the first to use drainage in abdominal surgery. In a case on which he operated in 1843 he found on opening the belly that the tumour was hydatid. Having emptied the abdomen as far as he judged safe, Clay says, "Before closing the wound I inserted into the abdominal cavity a string composed of about a dozen folds of white worsted, twelve inches in length, bringing one end out at the lowest part of the external wound." The worsted was left in for four months. The patient got quite well. In the early ovariotomy cases drainage was in effect constantly practised, for it was the custom to leave the ends of the ligatures long, hanging out of the wound ; but this was done because it was not known that silk might safely be left in the abdomen to be encapsuled and absorbed ; it was not done with the object and intention of securing drainage. This case of Clay's in 1843, I think, must be the first in which a wound communicating with the abdominal cavity was deliberately kept open in order that drainage might take place through it.

I find no record of Clay's ovariotomy results after 1865. In 1880 he wrote that he had done nearly four hundred operations ; but he did not say these were ovariotomies, nor give any particulars about them. He is quoted in an authoritative work* as having performed 395 ovariotomies with 101 deaths, but the reference is not given. I can find no publication of Charles Clay's relating so large a

* Tait on 'Diseases of the Ovaries.'

number of cases. Dr. John Clay, of Birmingham, published, as an appendix to his translation of Kiwisch on disease of the ovaries, a table containing exactly the same number of cases, 395, collected from different authors, and I cannot help thinking it possible that there has been some confusion of the writings of the two Clays.*

Clay contributed copiously to the medical journals during the early years of his residence in Manchester. He wrote on the therapeutic value of inspissated ox-gall. He argued that constipation was often due to deficiency of bile, and that therefore the most natural cure was to supply the place of the missing secretion with a similar product from another animal. He was the first in this country to cure varicose veins by Laugier's operation with Vienna paste. He invented a speculum for the better performance of the operation for strabismus. He wrote on the treatment of diabetes by mineral acids, on the vomiting of pregnancy, and many other subjects. His contributions to the medical literature of his time are said to number over one hundred. I cannot refer to them all, but those I have mentioned show his originality, his versatility, and the wide range over which his activity extended. His name will live by what he did for ovariotomy, not by these ephemeral productions.

Clay deserves respectful remembrance, not only as a surgeon of rare boldness and originality, but also as having been the founder of the earliest obstetrical journal published in this country. This was called 'The British Record of Obstetric Medicine and Surgery,' and its first number appeared in 1848. Clay was himself the principal contributor, but many writers sent papers to it, most but not all of them being gentlemen practising out of London. The journal was a most creditable one, and its early decease was a misfortune for obstetric science. It

* In some of his biographies Charles Clay is said to have won the Jacksonian Prize at the Royal College of Surgeons. It was won by John Clay, not by Charles Clay.

died because it was before its time, and therefore was not a financial success. Not enough medical men were then interested in the progress of obstetric medicine and surgery to support a journal. Its non-success did not arise from any failure to keep up to the intentions with which it was started. Dr. Clay says, "It has been a pleasure to us to know that our list of subscribers has remained firm to near the same number from the commencement of our labours, and that it includes nearly all the most prominent characters in the obstetric department throughout Europe and America. Still the number has not been sufficient to secure us from loss, or to encourage our proceeding further."

This journal contains reports of many of Clay's early cases of ovariotomy. Clay also wrote in it an article on the spontaneous evolution of Douglas and the spontaneous version of Denman, in which he clearly pointed out the differences between these two processes. To use his own words, he arranged the cases reported in their proper places. The one described by Denman, he pointed out, never takes place in the pelvic canal, but always in the uterine cavity, while in that of Douglas there is no recession of any part of the fœtus.

One most creditable feature of Clay's 'British Record' was the publication with it of translations of rare and valuable monographs. He thus undertook to do, for a small department of medicine, the work that the Sydenham Society was doing for medicine and surgery as a whole. The subscribers to the 'British Record' got translations of H. F. Naegele on the Mechanism of Labour, of Crantz on Rupture of the Uterus, of Harvey on Generation, of F. C. Naegele on Contracted Pelves, of De Graaf on the Ovaria, of Puzos on Hæmorrhage, and other monographs.

Dr. Clay wrote a small 'Handbook of Obstetric Surgery' which reached its third edition. In it the chief diseases of women and obstetric emergencies are arranged alphabetically, and the treatment of each briefly stated. The

work is small and its range large, and therefore brevity is a leading characteristic of it.

Clay, as I have said, had no hospital. All his operations were done in private. Some were reported fully, some scantily. At that early stage of ovariotomy it was not known what were the really important points, and therefore even the most detailed reports of Clay's cases are often wanting in information about matters that we now think vital. Clay was never a methodical man. He never published any complete serial record of his cases. They are scattered, some in one journal, some in another. At that time the debaters in our medical societies were very outspoken; it was publicly said with regard to ovariotomy that the successful cases were published as soon as the wound had cicatrised, while the unsuccessful were never heard of. From these causes, (1) Clay's practice not being public, and (2) his not reporting his cases in a way which enabled the reader at once to grasp the main results, to refer if he pleased to the details, and to satisfy himself of the authenticity of the records, it resulted that although Clay had a great local reputation, and was known in every part of the world to the men who studied ovarian disease, yet he did not influence the opinion of the profession at large so much as, from his ability, knowledge, and experience, he ought to have done. Clay felt to the end of his life that justice had not been done him. I think that when we consider how unfavourable the conditions were under which he worked, what difficulties he had to face, and yet how much he did, our judgment will be that it was a misfortune for surgery that Clay was not early placed in a more conspicuous position. Had he worked surrounded by students who could have watched his practice, reported his cases, stimulated his thought, and imitated his excellences, he would have powerfully helped on every department of surgery. As it is he remains the first great English ovariotomist.

Clay was a man of varied interests. He collected upwards of 1000 editions of the Old and New Testament.

These were sold by auction in 1883. Like another eminent obstetrician, Wm. Hunter, he gave part of his attention to numismatics. He wrote a work on 'The Currency of the Isle of Man, from its Earliest Appearance to its Assimilation with the British Coinage,' and formed a collection embracing every known coin in the kingdom of Man. This was sold for £100. He also made one of the largest collections ever formed of the copper and silver coinage of the United States. This was disposed of in New York to the American Government for £800. Clay was for some time President of the Manchester Numismatical Society, and was a member of several similar societies. He died on September 19th, 1893, aged ninety-one.

Dr. Edward John Tilt was born at Brighton in 1815, and received his medical education first at St. George's Hospital, and then in Paris. He graduated M.D. at the University of Paris in 1839, and afterwards travelled as private physician to Count Schouvaloff. In 1859 he became a Member of the Royal College of Physicians. He afterwards was appointed Physician-Accoucheur to the Farringdon General Dispensary. He was one of the original Fellows of this Society, was a member of the Council in 1867–8, Vice-President in 1869–70, Treasurer in 1871–2, and President in 1873–4.

Dr. Tilt received the impulse which shaped his professional career while studying in Paris. He learned from Recamier the use of the speculum, and the treatment of the morbid conditions the diagnosis of which was made possible by that instrument. Seldom has pupil spoken of teacher in terms of more ardent admiration than did Tilt of Recamier* in his first published work, the one which, in its later editions, took the title of 'Uterine and Ovarian Inflammation.' Tilt began practice armed with this knowledge, which at that time was to many people new. He helped Dr. Henry Bennet to make known the value of the speculum, and

* 'Diseases of Menstruation,' 1850, p. 27.

when Dr. Henry Bennet's health failed, and he became unable to carry on his practice throughout our English winter, Dr. Tilt lived in his house and took charge of his patients.

He wrote books on 'Elements of Health and Principles of Female Hygiene,' on 'Uterine and Ovarian Inflammations,' on 'The Change of Life in Health and Disease,' on 'Uterine Therapeutics,' and on 'Health in India for British Women.' Seven of his papers are in our 'Transactions,' and he contributed numerous papers to the medical journals of thirty or forty years ago; the substance of these latter was afterwards reprinted in his books. Dr. Tilt's writings were valued abroad as well as in this country; they were reprinted in America and translated into more than one European language, and their author was elected a member of several foreign learned societies.

Dr. Tilt's writings are as much out of date to-day as books on the geography of Africa written before the discoveries of Livingstone. But they will always retain a certain value by means of the numerous references which they contain to the literature of the subject, chiefly the French literature. These numerous references attest the trouble which Tilt took to make his work as thorough as he could. His books were written in a homely and colloquial, rather than an exact scientific style, and they contain many not unimportant practical hints omitted it may be because thought unnecessary, in most works on the subject. He went into great detail about the subjective nervous symptoms of female diseases. The books fulfilled a useful function in extending among the profession knowledge which at the time was new.

It is generally the case that the value of a new mode of treatment is found out before the cases in which it is suitable have been differentiated. Hence in the history of almost every new mode of treatment there is an experimental stage, in which the remedy is used for many cases in which it is not suitable as well as for those in which it is. Experience gradually teaches us to distin-

guish the cases the remedy will cure from those it will not, and the remedy then takes its proper place. If the new treatment be one capable of evil as well as good effects, cases are sure to arise during the experimental stage in which harm has been done, indignation is excited, and the innovators are condemned. As in the case of most new therapeutic measures, the value of the local treatment of inflammation and erosion of the cervix was found out before much was known about the symptoms and natural history of these conditions. If the speculum and caustic were at one time used too often, that was not the fault of Tilt. It was inevitable. He did but hasten the period of experiment with this mode of treatment. That period must have been passed through sooner or later.

Although one of the promulgators of a new mode of treatment looked on at first with much suspicion, Tilt was not one who grasped at every novelty that held out promise of success. He was eminently conservative. His books contain much outspoken criticism of the surgical procedures invented by Marion Sims; and when treatment by pessaries was passing through its experimental stage, Tilt was as severe in condemning what he considered uncalled-for mechanical treatment as he was in denouncing the cutting operations of Sims.

The esteem which his professional brethren felt for Dr. Tilt, and the personal popularity which he had won, are shown by the fact that he was the only President of this Society who had not been on the teaching staff of one of the large general hospitals.

To the end of his life Dr. Tilt took a warm interest in our Society. Although advancing years prevented his attendance at our meetings, he used to annually visit the library, and inquire as to the progress of the Society. He sympathised heartily with the Society's efforts at improving the education of midwives; and one of his Presidential addresses contains a full account of the Society's action up to that time. Dr. Tilt died from cerebral

hæmorrhage on December 17th, 1893, aged seventy-eight.

All that remains for me to say is to express my thanks to the Officers and Council of the Society for their kind assistance and support during the year that has passed.

Dr. PLAYFAIR said he had the privilege of proposing a cordial vote of thanks to the President for his excellent address, and to express the hope that he would permit it to be published in the 'Transactions' of the Society.

Fortunately this question required no advocacy to recommend it to the acceptance of the Society. Every Fellow must have been struck with the constant work which Dr. Herman had devoted to the service of the Society. His elaborate and interesting address was specially to be commended. He was struck with the tact and good feeling with which the President had described the lives of some of their departed Fellows, whose theories they were not always able to accept, but for whose characters and labours they all had the highest admiration.

This was seconded by Dr. BLACK, and carried with great applause.

The Scrutineers having presented their Report, the result of the ballot was declared by the PRESIDENT as follows:

OFFICERS AND COUNCIL.

President.—G. Ernest Herman, M.B.

Vice-Presidents.—Alban Doran; Edwin Hollings, M.D.; Peter Horrocks, M.D.; Harry Speakman Webb (Welwyn).

Treasurer.—John Baptiste Potter, M.D.

Chairman of the Board for the Examination of Midwives.—Francis Henry Champneys, M.A., M.D.

Honorary Secretaries.—William Duncan, M.D.; W. Radford Dakin, M.D.

Honorary Librarian.—John Phillips, M.A., M.D.

Other Members of Council.—Thomas Rutherford Adams, M.D. (Croydon); Fletcher Beach, M.D. (Sidcup); Robert Boxall, M.D.; Andrew Brown, M.D.; Edward Clapham, M.D.; Archibald Donald, M.A., M.D. (Manchester); Lovell Drage, M.D. (Hatfield); Willoughby Furner (Brighton); William John Gow, M.D.; Walter S. A. Griffith, M.D.; Gerald S. Harper, M.B.; John D. Malcolm, M.B., C.M.; Leonard Remfry, M.A., M.D.; John Henry Salter (Kelvedon); John Bland Sutton; Edward Sabine Tait, M.D.; John Sidney Turner; John Williams, M.D.

It was moved by Dr. Holman, seconded by Dr. Boxall, and carried unanimously—"That the best thanks of the Society be given to Dr. Champneys for his work and zeal as Editor of the 'Transactions' for the past six years."

Dr. Champneys replied.

It was moved by Dr. Potter, seconded by Dr. Hayes, and carried—"That the Society desires its most cordial thanks to be given to its retiring officers, viz. Dr. Horrocks, Honorary Secretary, and to Dr. Dakin, Honorary Librarian, for their valuable services to the Society during their respective terms of office."

It was moved by Dr. Routh, seconded by Mr. J. Sidney Turner, and carried unanimously—"That this meeting also expresses its best thanks to the retiring Vice-Presidents, Dr. Thomas C. S. Corry, Mr. Meredith, and Mr. J. Knowsley Thornton, and to the other retiring members of Council, Dr. F. W. Coates, Dr. Cullingworth, Mr. Freeman, Dr. H. Roxburgh Fuller, Dr. Gervis, Dr. Lewers, Dr. Perigal, Dr. Rutherfoord, and Mr. George H. Wade."

MARCH 7TH, 1894.

G. ERNEST HERMAN, M.B., President, in the Chair.

Present—37 Fellows and 2 visitors.

Books were presented by Mr. Malcolm, the St. Bartholomew's Hospital Staff, and the New York Academy of Medicine.

Thomas Herbert Morse, F.R.C.S. (Norwich), was admitted a Fellow of the Society.

Alexander W. W. Dowding, M.D.Durh. (New Wanstead); and J. Atkinson Hosker, M.R.C.S. (Bournemouth), were declared admitted.

The following gentlemen were elected Fellows of the Society :—Thomas Henry Barnes, M.D.; Hedley Coward Bartlett, L.R.C.P.Lond. (Saffron Walden); George A. H. C. Berkeley, B.A., M.B., B.C.Cantab.; Woodley Daniel Betenson, L.R.C.P.Lond.; Robert H. W. H. Brabant, L.R.C.P.Lond.; David Brown, M.D.; Robert Francis Burt, M.B., C.M.Edin.; John Henry Chaldecott, L.R.C.P.Lond.; Lennard Cutler, L.R.C.P.Lond.; Wm. Gilbert Dickinson, L.R.C.P.Lond.; John William Dickson, B.A., M.B., B.C.Cantab.; Henry William Drew, F.R.C.S. (Croydon); Charles Herbert Fagan, L.R.C.P.Lond. (Wadhurst); Henry Wilkes Gibson, L.R.C.P.Lond.; David Livingston Hamilton, L.R.C.P.Edin. (Great Missenden); Bernard Fred. Hartzhorne, M.R.C.S.; Ernest H. Helby, L.R.C.P.Lond.; Edward Horne, M.R.C.S. (Wallingford); Wilfrid E. Hudleston, L.R.C.P.Lond.;

Herbert James Ilott, M.D. (Bromley, Kent); James Prytherch James, L.R.C.P.I.; Evan Jones, L.R.C.P.Lond.; Sidney Herbert Lee, B.A., M.B., B.C.Cantab.; William L. Livermore, L.R.C.P.Lond.; Wm. Christopher Loos, L.R.C.P.Lond. (Great Missenden); Albert Stanley McCausland, M.D. (Swanage); John McOscar, L.R.C.P. Lond. (Watlington); William Henry Mondelet, M.D. (Brighton); Edgar Nicholson, M.R.C.S.; Solomon Peake, M.R.C.S.; Clement Pound, L.R.C.P.Lond. (Odiham); Cecil Robertson, M.B., C.M.Aber.; Horace Savory, M.A., M.B., B.C.Cantab. (Haileybury College, Hertford); Archdale Lloyd Sharpin, L.R.C.P.Lond. (Bedford); Thomas George Stevens, M.B., B.S.Lond.; Montague Tench, M.D. (Great Dunmow); Frank Alex. Wagstaff, L.R.C.P.Lond. (Leighton Buzzard); Thomas Alfred Walker, L.R.C.P.Ed.; and William Alfred Ward, L.R.C.P.Lond.

RUPTURED TUBAL GESTATION.

By William Duncan, M.D.

The specimen exhibited at the last meeting was now shown laid open; also a coloured drawing of the same.

FIBROID POLYPUS OF CERVIX.

Shown by William Duncan, M.D.

The patient from whom the specimen was removed was a single woman aged 34, whose periods were regular from the age of fourteen until one year ago, when she began to suffer from metrorrhagia, and this had become profuse for the last three months, with clots and pain in the lower abdomen.

On examination the vagina was found to be filled by a large tumour with a smooth and yellowish surface; the cervix uteri could not be felt, but bimanually the uterus was found to be in its normal position. The patient was anæsthetised, an écraseur wire passed over the mass as high up as possible, then the pedicle was slowly cut through; there was no hæmorrhage. The tumour was next seized with a pair of short midwifery forceps, and after a good deal of traction was extracted from the vagina. It was then found that its attachment had been to the posterior lip of the cervix at its lower part. Although there was no external rupture of the perineum, there was found to be a vertical rent in the middle of the posterior vaginal wall to the extent of quite three inches; the edges of this rent were brought together by silkworm gut sutures and the vagina washed out with a 1 in 3000 perchloride solution. The patient made an uninterrupted recovery.

The tumour, which was as large as a good-sized cocoa-nut, showed on section the ordinary fibrous structure.

Dr. Duncan pointed out how the vagina might be torn in delivery without any external rupture of the perineum, and the necessity for examining the vagina after every case of labour.

Dr. Cullingworth said, in reference to Dr. Duncan's specimen of uterine polypus, he would be glad to know whether the ecraseur (an instrument that he, the speaker, had for some years abandoned in favour of the scissors in the removal of fibroid polypi) was used in this case as a matter of routine or on account of some special circumstance.

The President said he used the scissors when the polypus was so small that the fingers could reach to its neck to guide the scissors. With very large polypi, such as Dr. Duncan's, the fingers could not get past them high enough to guide the scissors; and in such cases the stalk was best cut through with the écraseur. He did not think the delivery with forceps entire of a tumour so large as that shown by Dr. Duncan was good practice. It was better to cut the tumour up into bits, and thus deliver it without injury to the mother. This could easily be done with scissors.

Dr. Peter Horrocks agreed with the President that in

large polypi it was impossible to get at the pedicle with scissors. He believed it was a much quicker method to cut through the pedicle with a wire écraseur than to cut pieces out of the tumour, and so lessen it until the pedicle could be reached; and this plan was sometimes impracticable, as in the case of a large intra-uterine polypus. He related details of such a case in which he assisted Dr. Braxton Hicks to operate. The patient was over forty years of age, single and nulliparous. Some difficulty was experienced in passing the loop of the wire through the os uteri and over the tumour, but this was done, and the pedicle was cut through. Then came the difficulty of delivery; midwifery forceps and finally the cephalotribe were used, and the tumour delivered. During the operation the cervix was split, and the hymen was not merely torn, but pieces of it were carried away, and the perineum was lacerated. Hence this lady now presents a scarred perineum, carunculæ myrtiformes, and a split cervix; and inasmuch as the tumour had distended the abdomen so as to produce similar lines to lineæ gravidarum, it would be a very easy mistake to come to the conclusion that she had had a child. From a medico-legal point of view one could only say that a large body had passed along the parturient passages. There were no lineæ, however, on the breasts of the lady. In removing these tumours either by scissors or by wire écraseur there was, as a rule, but little hæmorrhage, owing to the muscular fibres in the pedicle contracting and remaining retracted.

Dr. DUNCAN said he agreed with the President that in large polypi it was far better and easier to cut through the pedicle with an écraseur than with scissors; he also agreed that after division of the pedicle the tumour should be removed piecemeal by means of scissors; indeed (as the specimen showed), he had begun to do this, but then used the midwifery forceps in order to preserve the tumour for exhibition at the Society's meeting, the result being a rent in the vagina, which fortunately healed without any ill result.

FŒTUS AT SEVEN MONTHS ILLUSTRATING CELOSOMA WITH RETROFLEXION, MENINGOCELE, AND TALIPES VARUS.

By LEITH NAPIER, M.D.

A COMMITTEE, consisting of Drs. Napier, Giles, and Dakin, was appointed to report on this specimen.

A PLEA FOR THE PRACTICE OF SYMPHYSIOTOMY, BASED UPON ITS RECORD FOR THE PAST EIGHT YEARS.

By Robert P. Harris, A.M., M.D. (of Philadelphia),
HONORARY FELLOW OF THE AMERICAN GYNÆCOLOGICAL ASSOCIATION.

(Communicated by Dr. Lewers.)

Symphysiotomy has an unfortunate early history, and, although its record is not nearly so discreditable as has been made to appear by early writers, there was enough of truth charged against it to make it an unpopular scheme of delivery, and to cause it to gradually die out. Too many women died, too many that did not die were disabled, and far too many children were lost. We are better able now than at any former period to make a record of the early days of the operation, and we give it as follows.

What has very properly been called "the first historical period of the operation" extended from 1777 to 1858 inclusive, and we have reason to believe that there were 150 symphysiotomies performed in the eighty-two years. Of this number we have the full results in 114, under which seventy-four women and forty-one children were saved. This gives a mortality of $34\frac{3}{4}$ per cent. for the women, or a fraction over one-third; and $63\frac{5}{8}$ per cent. for the children, or nearly two out of three. It will very readily be seen why the operation was for a time abandoned.

After the revival of the operation in Naples under Professor Morisani, and its much better management by him and Professor Novi in 1866, the mortality was reduced to 20 per cent. of the women (ten out of the first fifty) and 18 per cent. of the children. Not being satisfied with this per-

centage of recovery, these two operators in 1886 began a new era of success, by a more rigid technique and adherence to the sub-osseous method of section, aided by strict antiseptic precautions; and they, with their followers, have shown that fifty women could be operated upon so as to save forty-eight of them and forty-four children, a mortality of 4 per cent. of the women and 12 per cent. of the children. Of the six children lost out of the fifty, one was premature, and died; a second died in twelve hours; a third died from prolapsed cord; a fourth was stillborn, after a labour of eighty-four hours; a fifth lived one day; and the sixth was stillborn. The two women that died had been very long in labour, one of them ninety-six hours. After such a measure of success it is folly to decry the operation, or to claim any longer that it is not founded upon a rational basis. We may not be able to equal it, but the facts stand, and we ought to endeavour to save as large a proportion of women and children under it as may be possible.

In view of these facts, it is not to be wondered at that the operation is no longer confined to Italy, but that it made an exit in February, 1892, and has since that time spread over Europe, and been welcomed in North and South America. In 1891 there were twelve operations, all in Naples, and in 1892, so far as I have ascertained, there were eighty-three in Europe and America, only eight of which belonged to Italy. The operation is now under test in twelve countries, and will probably be performed as many as 200 times during the current year, to judge from its great increase up to July last. It will no doubt require a probation of several years before we can form a fair estimate of the real dangers of the operation and its proper measure of fatality. With many trying it for the first time who had never witnessed its performance, we should be encouraged by the fact that but nine cases proved fatal out of the eighty-three operated upon in 1892. The possibility of success is best shown by the facts that Prof. Adolphe

Pinard of Paris did not meet with a death until it followed as a result of his twentieth operation, and that in the United States there has been but one woman lost out of the last fifteen up to November 20th, 1893, although delivered under twelve operators, ten of whom operated for the first time.

Much better progress has been made, out of Italy, in saving the lives of the women than of the children; and it is in the latter respect that time, experience, and knowledge will eventually demonstrate their value. Two lives are at stake in the delivery, and if both are not saved there should be good and valid reasons for the failure. Italy has reduced her fœtal mortality to 12 per cent., and this measure should be aimed at in other countries. Of the eighty-three children delivered in 1892, ten were stillborn, two were destroyed by cranioclasm, and ten died within three days after delivery, leaving sixty-one recorded as saved, or 73¾ per cent. To save the fœtus the woman should be operated upon early; the size of her pelvis should be accurately ascertained. The true conjugate should not measure less than 2¾ inches; the child should be very carefully, and not hurriedly, delivered by the forceps applied to the sides of its head, and if asphyxiated it should be carefully treated for its restoration.

Very few as yet know, for the details of the case are only now in press, that the first symphysiotomy of the United States was the third operation of its class which was performed after the method ceased to be confined to Italy, Prof. Pinard of Paris having had the first and second. The operator, Dr. Wm. Thomas Coggin, now of Athens, Georgia, was in Heidelberg in 1890, and there learned all about the symphysiotomies of Naples from an Italian medical student. He lived at that time in North-Eastern Alabama, and there, in Wills' Valley, he performed his operation, on March 12th, 1892, upon the wife of a miner, a primipara of twenty-three, 5 feet 7 inches high, having a contracted pelvis and a very

large fœtus. After a labour of four hours, and two failures to deliver with forceps of different forms, Dr. Coggin, then a ten years' graduate, opened the symphysis and delivered under the forceps a male fœtus weighing 11¾ lbs., and having a very large head. The pubic bones separated 2¾ inches; the sacro-iliac synchondroses were uninjured, and the soft parts likewise. The woman made an excellent recovery, and she and her boy are now alive and well, the latter being a strong baby of twenty-one months old.

This was the first of thirty-one operations in the United States, and the fœtus was the heaviest of the thirty-one, the nearest weighing 10 lbs. Of these children twenty-one were males. Twenty-eight were carefully weighed, and gave an average of 7¾ lbs. each. Eighteen of the thirty-one women were primiparæ.

The time in labour may be given as follows:—Labours induced, 2; six hours or under, 2; seven to twelve hours, 5; thirteen to eighteen hours, 4; nineteen to twenty-four hours, 7; twenty-five to thirty-five hours, 1; thirty-seven to forty-eight hours, 5; forty-nine to sixty hours, 2; sixty-one to seventy-two hours, 2; and four days, 1 =31. This record shows that promptness in action has very rarely been a virtue in the operations of the United States, as twenty-two of the thirty-one women were allowed to be in labour more than half a day, and one-half of these (eleven) over a whole day.

The minimum conjugate measurement given by Morisani of Naples is 67 mm.; we give it for this country at 70 mm., because of a greater average weight in the fœtus.

The fatal cases in the United States have been four; and were in order Nos. 10, 14, 16, and 26. No. 10 was in labour twenty-five hours, taken to hospital with pulse of 150, died in twelve hours. No. 14 in labour sixteen hours, died of septic peritonitis in twelve days, and believed to have been infected prior to the operation. No. 16 in labour twenty hours, taken to Maternity in emergency, on a cold rainy day, had been drinking whisky; died of double

pneumonia, attributed to exposure. No. 26 in labour three days before going to Maternity; died on the eleventh day from sepsis, originating in the sub-osseous wound.

It will not be wondered at that there were nine fœtal deaths. No. 1, labour lasted twenty-two hours, death in twenty-four hours, after long head pressure at inferior strait. No. 5, labour twenty-four hours, death on third day from meningeal hæmorrhage. No. 10, labour twenty-five hours, death in seventeen hours, from injuries prior to admission to hospital. No. 14, labour sixteen hours, child stillborn. No. 17, labour fifty hours, child stillborn. No. 20, labour forty-eight hours, child stillborn. No. 22, labour twenty-one hours, death of child soon after delivery. No. 29, labour induced, c.v. 67 mm., death of child from injuries in delivery by the feet. No. 31, labour four days, child stillborn. Early operations should have saved nearly all but Case 29.

Dr. Lewers said that Dr. Harris, in sending him the paper which had just been read, had inquired what stopped the progress of symphysiotomy in England. It certainly seemed strange that so many cases should be reported from Italy, France, and America, and that nevertheless, so far as he knew, his own case, performed on February 12th, 1893, was the only case that had been published as having occurred in England since the revival of the operation. Dr. Harris had dealt with the subject from the historical point of view, and had divided it into two periods. The first, from 1777 to 1858, during which there were 150 symphysiotomies, and the second from 1866 to the present time. It was a significant fact that the last ten operations of those performed in the first period showed a maternal and fœtal mortality of exactly 50 per cent. If one looked into the details of the cases belonging to the first period (which were given in a previous paper of Dr. Harris's), it was evident that some of the mortality was to be attributed to the operation having been performed in cases of extreme pelvic contraction with the object of making symphysiotomy a substitute for Cæsarean section. Much of the mortality also was no doubt due to the want of observance of antiseptic methods. It was well known that till recently the operation was condemned by writers on midwifery on the ground that it did not usefully increase the space available for the passage of the fœtus, and this view was supported by experiments in the post-mortem room. It had, however, since been found that

when similar experiments were made on the bodies of women dying either in labour, or a few days after, division of the symphysis did increase the space very considerably—the gain in the conjugate being somewhere about three quarters of an inch. Dr. Lewers believed that the conditions essential to success in performing symphysiotomy were first that it should only be done in slight degrees of pelvic contraction where the pelvis was just too small to allow the passage of the fœtus. It would be seen that this practically meant that symphysiotomy was an emergency operation, the special indication being failure to deliver with the forceps in a case when the pelvis was only slightly contracted. The second point necessary for success was a strict observance of antiseptic principles. The present mortality of symphysiotomy appeared to be about 7 per cent.

Dr. Peter Horrocks said that practically the question was, given a case where the child was alive, but where it was impossible to deliver it alive, which of the three measures, craniotomy, Cæsarean section, or symphysiotomy, should be adopted? He considered that it was very unfair to compare the very best and lowest mortality in symphysiotomy and Cæsarean section, carried out with all modern cleanliness and antiseptic and aseptic precautions, with the mortality of craniotomy in the past without such precautions. Indeed, he looked upon the mortality of craniotomy carried out skilfully and with modern asepsis to be *nil* so far as the mother was concerned. Again, he believed that the maternal mortality of Cæsarean section was less than that of symphysiotomy, and certainly more of the children were saved. Hence on this ground he considered Cæsarean section was preferable to symphysiotomy. But there was another point to be considered besides the mortality, and that was the after-effects. In Cæsarean section there was a risk of ventral hernia, as after all abdominal sections. This might be lessened by more careful suturing. Then the patient might become pregnant again, and unless a miscarriage was induced, the uterus might rupture along the line of incision. He mentioned such a case in which sterility had been effected, so it was thought, by ligature of both Fallopian tubes. But two or three years later the patient conceived, and the uterus burst, and the child and a portion of the placenta escaped into the abdominal cavity; laparotomy was performed, and the uterus was removed along with the child, placenta, and the uterine appendages. The specimen was now in the Guy's Hospital Museum, and it was interesting to note that one tube had been cut right through by the ligature, which lay halfway between the cut ends of the tube, glued to the parts by a little adhesive lymph. The cut ends of the tube were half an inch apart, and appeared to be quite sealed. The other tube had been ligatured, but the ligature looked as if it had been only just put on, and it

was thought very likely that the lumen had not been sufficiently occluded to prevent an ovum passing down to the uterus. He mentioned another case of Cæsarean section where the tubes were tied and where the patient subsequently conceived; a miscarriage was induced, and she got all right. Of course, by adopting severer measures, such as removing a piece of the tube or even the ovaries, it might be possible to avoid this risk of future pregnancies. His own experience of symphysiotomy consisted in witnessing one case. His colleague, Dr. Galabin, operated. He confessed that he was greatly astonished to see the wide divergence of the cut surfaces of the symphysis. In one of Dr. Harris's cases he noticed that the distance was two and three quarter inches, and he should think it was quite as much as that in the case he saw himself. What the condition of the sacro-iliac joints and ligaments was at the time he could only surmise. The pubes were brought together by means of a wire suture; but although both mother and child survived, the mother has never been able to do any work since, and was, he had heard, at the present time in an infirmary, lying on her back most of the time. He wanted to know, therefore, whether this unfortunate sequela was at all common after symphysiotomy, and whether it could be avoided in any way. One would expect that if the integrity of the bony arch of the pelvis were interfered with to such a degree as was implied by cutting through the symphysis pubis, there would be more or less impairment to the power of standing, walking, and working. In Dr. Lewers' case shown before this Society, the patient, although able to walk, was not able to do her work as well as before the operation. On these grounds, therefore, he should recommend a patient under the conditions named to have craniotomy performed, or if she was desirous of having a living child, and was willing to take the extra risk, then he should recommend Cæsarean section in preference to symphysiotomy.

Dr. Griffith said the question Dr. Lewers had felt himself unable to answer appeared to him (Dr. Griffith) to present no great difficulty. Why was symphysiotomy not more frequently performed in England? Because the operation was a very serious one for the patient, and those who advocated it most strongly had not succeeded in convincing them of the superiority of this grave operation over other methods of treatment involving far less danger to the mothers; indeed, the extreme views of some who discarded the induction of premature labour and even the forceps for symphysiotomy, must produce a feeling against the legitimate but clearly limited use of the operation. Since the resuscitation of the operation Dr. Griffith had been prepared to perform it in a suitable case, but though he had charge of about 3000 cases yearly at St. Bartholomew's and at Queen Charlotte's Hospitals, he had had no case in which the necessary conditions

were present, namely, the patient in labour, a moderate degree of contraction (the conjugate about three inches), the fœtus alive, and delivery having failed to be effected with the forceps properly applied. From his knowledge of the records of the operation, which as yet only gave the immediate results, he (Dr. Griffith) believed the risks of Cæsarean section by a competent operator were to be preferred to those of symphysiotomy. He very much hoped that Dr. Horrocks would examine and report to the Society the specimen to which he had referred, in which, after ligature of the oviducts during Cæsarean section, intra-uterine pregnancy had followed.

Dr. Leith Napier agreed with Drs. Horrocks and Griffith in the general tenor of their remarks. He was at a loss to understand some of the arguments advanced by Dr. Lewers and Dr. Harris. With a pelvic conjugate of three inches it was often possible to deliver by forceps; and in some cases, by performing version and bringing the small bimastoid end of the cephalic wedge first into the pelvis, delivery might be effected when forceps failed. It had been postulated that the minimum conjugate measurement for symphysiotomy was $2\frac{3}{4}$ inches. Between this and natural or instrumental delivery was symphysiotomy preferable to Cæsarean section? In determining delivery by forceps we might require not only art but considerable *vis a fronte;* strength as well as skill was frequently demanded. It had been advanced that an increased diameter of $2\frac{3}{4}$ inches could be gained by division of the symphysis. He accepted the fact as adduced by Dr. Horrocks, but thought it could only be explained by a total division of the ligaments. Usually, separation of the symphysis would only allow of from $\frac{7}{10}$ inch to 1 inch of increased diameter; but if the ligament were divided they might have a cleft of $1\frac{1}{2}$ inches to $2\frac{1}{4}$ inches. Continental experience, with the exception of Pinard's, was hardly in accord with unreserved acceptance of the operation. Except Zweifel, who admitted that fever followed most of his cases, no prominent German had endorsed Pinard's views. At any rate it was clear that up to the present the operation was not one to be employed in general practice. Such excellent results had been obtained recently from Cæsarean section that the call for symphysiotomy was not great. In the Royal Maternity Charity of London, with an annual number of about 4000 deliveries, no case had required either of these proceedings since he had been on the staff. One had to estimate the after-condition of the patient as well as the immediate success, and so far experience had shown this to be better in Cæsarean sections than in cases subjected to division of the symphysis.

The President thought that obstetrical science was much indebted to Dr. Harris for his laborious compilation, and to those gentlemen who had the boldness to practise new methods

of delivery, and the candour to put the results before the profession. He observed that the present mortality of symphysiotomy, as shown by Dr. Harris's collection of American cases and the statistics of French operators, was about 10 per cent. Now Cæsarean section, in cases of pelvic contraction which was recognised during pregnancy, so that the operation was done at a selected time, with every needful preparation, and before the patient had had time to suffer from the effects of labour, was not attended with a higher mortality than this. The collectively high mortality of Cæsarean section was due to its being so often performed on patients already exhausted by protracted labour, injured, and infected with septic poison. Cæsarean section could be followed by sterilisation of the patient. The best way of doing this had not yet been established; but by removal of the ovaries the patient could be undoubtedly saved from the risk of future pregnancies. If Cæsarean section were successfully performed, they knew of no ulterior ill effects from it. Symphysiotomy did not sterilise the patient. If accepted as the proper method of delivery in certain cases, it might be required in a case of the kind many times. No information whatever was before the profession showing whether the pubic symphysis could be repeatedly divided in the same patient in labour after labour, with good union following each time. The statistics at present before the profession were altogether silent as to the after histories. The patients recovered, and left the hospital able to stand and walk; and that was all they knew of them. Whether they were able to lift as much as before, to stand or walk as long as they previously could, they were not told. In the single case previously reported to the Society, although the patient could walk, yet her power of doing her household work was diminished. In another case reported, the springing asunder of the bones after division of the symphysis caused a laceration of the urethra. The frequency of accidents of this kind must be taken into account as well as the mortality. He was at present inclined to think that Cæsarean section was preferable to symphysiotomy.

ON THE RELATION OF HEART DISEASE TO MENSTRUATION.

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(*Abstract.*)

Particulars with regard to menstruation are given of fifty cases. In twenty-eight the menstrual flow was unaltered. In seventeen the flow was absent or scantier than before. In five the flow was either more profuse or recurred more frequently than before. In no case was there good evidence that heart disease gave rise to severe menorrhagia. It would seem that either amenorrhœa or scanty menstruation was a far more common accompaniment of heart disease than menorrhagia.

A further analysis of these cases seems to point to the fact that heart disease leads to relative sterility, and also that it greatly increases the tendency to premature expulsion of the ovum.

In conclusion, it is pointed out that a large number of women, suffering from valvular disease of the heart, pass safely through the period of pregnancy and labour.

For convenience, these cases may be further analysed as follows:

(1) *Mitral stenosis* (twenty-two cases):

In nine cases menstruation regular, and amount lost unaltered.

In five cases menstruation regular but more scanty.

In four cases there was amenorrhœa.

In four cases menstruation was either more frequent or more profuse.

(2) *Mitral incompetence* (fifteen cases):
In ten cases menstruation unaltered.
In four cases menstruation more scanty.
In one case amenorrhœa.

(3) *Mitral stenosis and incompetence* (seven cases):
In four cases menstruation unaltered.
In one case menstruation more scanty.
In one case amenorrhœa.
In one case slightly increased menstrual loss.

(4) *Aortic incompetence and obstruction* (two cases):
In both cases menstruation unaltered.

(5) *Aortic and mitral incompetence* (three cases).
In all cases menstruation unaltered.

(6) *Aortic incompetence and obstruction and mitral incompetence* (one case):
Menstrual loss more scanty than before.

The chief object of this paper is to answer two questions:

1st. Does organic heart disease modify the menstrual process?

2nd. If there is any such modification, what is the nature of it?

In collecting cases for this purpose some other collateral facts, such as fertility and the liability to abortion or miscarriage, have been inquired into, and some reference will be made to these points at the end of the paper.

For some time past I have taken notes of all cases of well-marked valvular disease in adult women which have come under my notice, and the number collected amounts in all to fifty. Only one out of all these fifty cases had found her way into the Special Department for Diseases of Women (Case 44), all the others being drawn from among either the promiscuous crowd of out-patients presenting themselves at the doors of a large general hospital, or from the medical out-patient rooms or wards. It was for symptoms of an imperfectly compensated valve lesion that they came for help, and I believe that from such cases as

these far more trustworthy conclusions can be drawn than if an attempt be made to estimate the relation of heart disease and menstruation from cases presenting themselves in any special department for the treatment of uterine disease.

I may add that I approached the subject without bias, and possessed only of a general impression that heart disease frequently caused menorrhagia.

In the following table the main points of each case are given (Table I).

It will be observed from this tabular statement that in five cases out of the total of fifty the menstrual loss was either more frequent or more profuse than before (Table I, Cases 4, 15, 18, 22, 43). In none of these cases, however, was the loss profuse enough to lead the patient to make any complaint of the condition at the time she came under observation.

In Case 4 menstruation was regular until two months before she was first seen by me, but for the last two months she has had a loss of blood recurring every fortnight, but the amount lost is only moderate in quantity. This patient had had two attacks of rheumatic fever, the first twenty-three years ago, and the second eighteen years ago, and moreover she had suffered from shortness of breath for the last eight years. It is quite clear, therefore, that the mitral stenosis from which she was suffering must have existed for a long time without in any way affecting the regularity or amount of the menstrual loss.

In Case 15 the flow lasts three days and is not excessive, but the patient thinks that during the last year the amount lost is slightly greater than it was previous to that time.

In Case 18 the periods have recurred at intervals varying from two to six weeks since her confinement five years ago. The amount lost has also been more profuse during these five years than it was before. The flow generally lasts ten days, but is only profuse during the first two. She says that she has attended as an out-patient at one of the Metropolitan hospitals, for uterine disease. Inasmuch

Table I.

No.	Name.	Age.	Civil state.	No. of children and miscarriages.	Rheumatic fever.	Form of heart disease.	Symptoms.	Menstruation.	Remarks.
1	S. H.	26	Single	None	3 attacks; 1st 8 years ago	Mitral stenosis	Shortness of breath	Regular; not excessive	Amenorrhœa during attacks of rheumatic fever.
2	E. C.	29	Single	None	1 attack 5 years ago	,,	Shortness of breath for 4 years	Regular; scanty	Amenorrhœa for 5 months during attack of rheumatic fever.
3	M. C.	24	Single	None	2 attacks; 1st 7 years ago, 2nd 4 years ago	,,	Palpitation; shortness of breath	Regular and scanty till 4 months ago; amenorrhœa since	Anæmic.
4	E. H.	40	Married 23 years	3 children; No miscarriages	2 attacks; 1st 23 years ago, 2nd 18 years ago	,,	Shortness of breath for 8 years	Regular till 2 months ago; since then loss of blood every 14 days; not excessive	1st child born 1 year after marriage; 2nd child born 3 years after marriage; 3rd child born 18 years after marriage (stillborn).
5	E. R.	24	Married 3 years	1 child 2 years ago; no miscarriages	1 attack 4 years ago	,,	Shortness of breath	Regular; not excessive	Some hæmoptysis during pregnancy; no difficulty during labour.
6	C. C.	35	Married 18 years	5 children; No miscarriages	Several attacks; 1st attack 23 years ago	,,	Shortness of breath	Regular; scanty	Menstruation commenced at age of 14; shortness of breath and cough during pregnancies; last child stillborn.
7	E. C.	40	Single	None	No	,,	Shortness of breath	Regular; more scanty than formerly	Always short of breath on exertion; left hemiplegia 4 years ago; heart dilated; pulse frequent.
8	A. D.	28	Married 7 years	2 children; last child 5 years ago; No miscarriages	No	,,	Shortness of of breath for 2 years	Regular; more scanty than formerly	No trouble while pregnant; flooding after birth of last child.

No.	Name.	Age.	Civil state.	No. of children and miscarriages.	Rheumatic fever.	Form of heart disease.	Symptoms.	Menstruation.	Remarks.
9	A. L.	33	Married 11 years	None	No	Mitral stenosis	Shortness of breath for 1½ years	Regular; duration 4 days; not excessive	Feet slightly œdematous.
10	M. S.	40	Married 20 years	4 children; last 15 years ago; no miscarriages	2 attacks; 1st 12 years ago, 2nd 10 years ago	„	Shortness of breath; cyanosis	Regular; duration 4 days; not excessive	No pregnancies since attack of rheumatic fever; short of breath for several years.
11	E. B.	31	Married 12 years	No children; no miscarriages	1 atttack 3 months after marriage	„	Shortness of breath; slight œdema of feet	Regular; duration 3 days; always scanty, but scantier lately; no pain	—
12	J. J.	42	Married 12½ years	3 children; last 5 years ago; 2 miscarriages	1 attack 14½ years ago	„	Pulse irregular; shortness of breath	Regular; duration 4 days; not excessive	Menstruation same as before attack of rheumatic fever; miscarriages occurred between 1st and 2nd, and 2nd and 3rd child.
13	E. S.	29	Married 6 years	4 children; last 2 months ago; no miscarriages	No	„	Shortness of breath since confinement	Regular; duration 3 days; no pain	Lost a good deal of blood at last confinement; suffered from cough and fainting attacks during pregnancy.
14	E. O.	23	Married 3 years	2 miscarriages at 6½ months; last 2 months ago	1 attack 2 years ago	„	Shortness of breath; hæmoptysis	Regular; not excessive	Both the miscarriages occurred since attack of rheumatism; labours easy; not much blood lost.
15	A. B.	21	Single	None	No definite attack	„	Shortness of breath; slight cyanosis	Regular; duration 3 days; thinks she loses more than formerly during last year	Menstruation began at 13; did not menstruate between ages of 14 and 17; regular since; some pain before flow for 3 months.
16	A. T.	18	Single	None	1 attack 1 year ago	„	Shortness of breath; anæmia	Has only menstruated 3 times since attack of rheumatism, a year	Menstruation regular before attack of rheumatism.

				ago; 2 miscarriages, last 2 years ago	3rd 3 years ago		fined to bed for last year	always rather profuse; not painful; amenorrhœa for last year	
18	S. C.	33	Married 9 years	2 children; last 5 years ago; no miscarriages	1 attack 10 years ago	,,	Shortness of breath	Regular till birth of last child; duration 5 days; not painful; since birth of last child intervals 2—6 weeks; more profuse	Has been an out-patient at Guy's Hospital with disease of the womb.
19	A. B.	28	Single	None	No	,,	Shortness of breath; anæmia	Interval 4—6 weeks; scanty pain during first day of loss	Menstruation commenced at 17; pulse frequent; is unable to work.
20	C. S.	39	Married 11 years	5 children, last 4½ years ago; 2 miscarriages, last 2 years ago	No	,,	Cyanosis; dropsy; confined to bed	Regular till 3 months ago; scanty, not painful; amenorrhœa for 3 months	Pulse very irregular and frequent; heart greatly dilated.
21	S. M.	26	Married 7 years	6 miscarriages; last 7 months ago	No	,,	Shortness of breath; anæmia	Regular; duration 4 days; not excessive; no pain	On 1st, 2nd, and 3rd occasions miscarried at 6th month; on 4th and 5th occasions miscarried at 7th month; on 6th occasion miscarried at 3rd month. During 3rd, 4th, and 5th pregnancy loss of blood commenced at end of 3rd month and continued till miscarriage occurred.
22	E. O.	33	Married 5 years	1 child 4 years ago; no miscarriages	No	,,	Shortness of breath	Regular before confinement; since then interval 5—6 weeks; more profuse than formerly	Considerable dyspnœa while pregnant; says labour was difficult because of her heart being weak.
23	A. C.	30	Married 5 years	No children; 1 miscarriage 4 years ago	1 attack 13 years ago	Mitral incompetence	Shortness of breath	Regular; not excessive; some pain since miscarriage	—

No.	Name.	Age.	Civil state.	No. of children and miscarriages.	Rheumatic fever.	Form of heart disease.	Symptoms.	Menstruation.	Remarks.
24	G. B.	28	Married 7 years	3 children, last 14 mos. ago; no miscarriages	2 attacks	Mitral incompetence	Shortness of breath	Regular; not excessive	2 children born since the first attack of rheumatic fever
25	H. D.	26	Married	1 child; no miscarriages	1 attack 2½ years ago	,,	Shortness of breath; tachycardia at times; pulse rate at these times 260 per minute	Regular; not excessive	Amenorrhœa for 10 weeks during attack of rheumatic fever.
26	E. R.	33	Single	None	1 attack 13 years ago	,,	Shortness of breath	Regular; more scanty lately	Menstruated regularly during attack of rheumatic fever, which lasted for 5 months; heart much dilated.
27	M. W.	37	Married	3 children, last 13 years ago	1 attack 1 year ago	,,	Shortness of breath	Irregular for 2 years; intervals 2—8 weeks; amenorrhœa for ten months	—
28	M. R.	27	Married 1½ years	No children; no miscarriages	1 attack 22 years ago	,,	Shortness of breath	Regular; more scanty lately	Has always been short of breath.
29	M. B.	22	Married 2½ years	1 child 18 months ago; 1 miscarriage 6 months ago	3 attacks; 1st 6 years ago, 2nd 5 years ago, 3rd 4 years ago	,,	Shortness of breath for 6 years	Regular; interval 3 weeks; more profuse since marriage	Pregnancy and labour normal; lost a good deal of blood after confinement.
30	G. A.	21	Single	None	6 attacks; 1st 11 years ago, 6th 3 years ago	,,	Shortness of breath for 3 years	Never regular; interval 3—8 weeks; duration 4 days; more scanty during last year; some pain	—
31	E. S.	24	Married 4 years	2 children, last 2 years	2 attacks; 1st 10 years ago,	,,	Anæmic; some joint	Regular; duration 7 days; not excessive	Menstruation began at 14, before first attack of rheumatic fever; confinements

				riages			some œdema of feet	some pain	rheumatic fever.
33	M. R.	36	Married 15 years	2 children, last 12 years ago; no miscarriages	1 attack 16 years ago	„	Shortness of breath; palpitation	Regular; duration 6 days; not excessive; more scanty for 6 months; no pain	—
34	H. S.	28	Married 3 years	1 child 8 mos. ago, stillborn; 4 miscarriages, last 3 weeks ago	1 attack 11 years ago	„	Shortness of breath; anæmic	Regular; duration 7 days; not excessive; some pain during menstrual periods since marriage	Menstruation ceased for some months during attack of rheumatic fever.
35	M. D.	30	Married 10 years	2 children, last 8 years ago; no miscarriages	2 attacks; 1st 9 years ago, 2nd 4 months ago	„	Shortness of breath; rather anæmic	Regular before birth of last child; since then less frequent and more scanty	Amenorrhœa for some months after first attack of rheumatic fever; heart dilated; apex-beat in 6th space, outside nipple line.
36	E. D.	23	Single	None	4 attacks; 1st 16 years ago, 4th 2 years ago	„	Shortness of breath since first attack of rheumatic fever	Interval 4—5 weeks; duration 4 days; not excessive; some pain during first day	—
37	M. W.	24	Married 8 years	2 children, last 3 years ago; 1 miscarriage at 6½ month, 7 months ago	1 attack 6 years ago	„	Shortness of breath	Regular; not excessive	Is now 4 months pregnant, and is losing blood (threatening miscarriage).
38	A. B.	28	Married 9 years	4 children; No miscarriages	No	Mitral stenosis and incompetence	Shortness of breath 18 months	Regular; scanty	Symptoms date from last confinement 18 months ago; labours easy; slight hæmoptysis during last pregnancy.

No.	Name.	Age.	Civil state.	No. of children and miscarriages.	Rheumatic fever.	Form of heart disease.	Symptoms.	Menstruation.	Remarks.
39	J. J.	42	Married 19 years	6 children, last 6 years ago; no miscarriages	1 attack 4 years ago	Mitral stenosis and incompetence	Palpitation and shortness of breath for 6 years	Never regular since birth of last child; loss more infrequent and more scanty than before	Amenorrhœa for last 10 months; says she has suffered from heart trouble since birth of last child 6 years ago.
40	M. H.	30	Married 12 years	6 miscarriages, all at 7th month; last 2 years ago	No	,,	Palpitation and shortness of breath	Regular; duration 7 days; not excessive	—
41	A. B.	22	Married 3 years	2 children, last 4 months ago; no miscarriages	1 attack 7 years ago	,,	Shortness of breath; œdema of feet	Regular before marriage; duration 4 days; not excessive	Has only menstruated once since first pregnancy, as she has been either suckling or pregnant during that time.
42	A. C.	44	Single	None	3 attacks; 1st 30 years ago, 3rd 2 years ago	,,	Orthopnœa; dropsy; ascites; jaundice	Regular, but scanty, till 2 years ago; not menstruated since	Two years ago was admitted into hospital with signs and symptoms of cardiac dilatation; has been confined to bed ever since.
43	A. B.	21	Single	None	3 attacks; 1st 11 years ago, 2nd 7 years ago, 3rd 3 weeks ago	,,	Rheumatic pains still present	Regular; duration 4—5 days; not excessive; thinks she has lost rather more for last year	—
44	M. B.	26	Married 6 years	1 child 1½ years ago; 1 miscarriage shortly after marriage	1 attack 12 years ago; slight attacks since	,,	Shortness of breath; enlargement of abdomen	Regular; duration 5—6 days; not excessive	Was found to have cystic disease of right ovary; ovariotomy, November, 1892; recovery.

			11 years	ago; no miscarriages	2 years ago	petence and obstruction	of breath		has had 2 children since attack of rheumatism; labour natural; not been well since birth of last child.
46	M. M.	32	Married 13 years	6 children, last 4 years ago; no miscarriages	No	„	Shortness of breath	Regular; not excessive	Hæmoptysis during 3rd pregnancy.
47	K. F.	25	Single	None	2 attacks; 1st 12 years ago, 2nd 9 years ago	Aortic and mitral incompetence	Shortness of breath	Regular; not excessive	Amenorrhœa during attacks of rheumatic fever.
48	M. M.	36	Married	4 children, last 8½ years ago	No	„	Shortness of breath for 2 years	Regular; not excessive	The first 3 children were stillborn; fourth child lived 10 days.
49	E. D.	32	Single	None	3 attacks; 1st 10 years ago, 2nd 2 years ago, 3rd 6 months ago	„	Shortness of breath; œdema of feet	Regular; duration 4—5 days; not excessive; no pain	Menstrual loss is the same now as it always has been; amenorrhœa during attacks of rheumatic fever.
50	E. H.	42	Married 15 years	3 children, last 4 years ago; 5 miscarriages, last 9 years ago	2 attacks; 1st 27 years ago, 2nd 8 years ago	Aortic incompetence and obstruction and mitral incompetence	Shortness of breath for 4 years	Regular; duration 4 days; scanty	2 children born since 2nd attack of rheumatic fever; labours natural.

as her symptoms dated from her last confinement, it is at least possible that the increased menstrual loss depended on troubles arising during the puerperal period, and were not directly due to the mitral stenosis from which she suffered.

In Case 22 the patient also dates the increased quantity lost at the monthly period from her confinement four years before. The interval, however, which before this confinement was four weeks, now varies between five and six.

In Case 43 the menstrual flow is regular every four weeks, lasting four to five days, but she thinks she has lost rather more at her periods during the last year than she did before. The amount lost, however, is not excessive.

The term menorrhagia could not, I think, fairly be applied to any of these five cases except to Case 22, who presumably was suffering from some form of uterine disease.

In eleven cases the menstrual loss was more scanty than before, and in six cases there was amenorrhœa which had existed for a longer or shorter period of time. In the two most severe cases of cardiac disease contained in the above table, amenorrhœa was present in each (Cases 17 and 20). Both these patients suffered from mitral stenosis with great cardiac dilatation, enlargement of the liver, and dropsy, and in one of them tricuspid regurgitation was present. It is true that in the second of these cases (Case 20), though heart symptoms with dropsy had been prominent for many months, the amenorrhœa had only existed for three months, and previous to that time the menstrual loss had been normal. Thus it would seem that in advanced cases of mitral disease with great cardiac dilatation and general dropsy, menstruation ceases after a time. In the remaining twenty-eight cases the interval, duration, and amount of the menstrual loss were unaltered.

It will thus be seen that out of fifty cases, in twenty-eight menstruation was unaltered; in seventeen the flow

was absent or scantier than before; in five the flow was more profuse or more frequent than before.

In the two cases where the aortic valves alone were involved it will be noticed that menstruation was unaffected.

Judging from statements made in text-books, there appears to be a prevailing opinion that mitral disease is a cause of menorrhagia. From the history of the patients that have come under my observation it will be seen that amenorrhœa or scanty menstruation occurs much more often than any increase in the menstrual loss (in the proportion of 17 to 5), and among all the fifty cases there was only one well-marked case of menorrhagia. I have no doubt that cases do occasionally present themselves in the out-patient department for diseases of women, suffering from menorrhagia complicated by the presence of organic mitral disease, but how far the latter is the cause of the former is open to some doubt. It must be remembered that miscarriages are somewhat frequent among patients suffering from mitral disease, and the hæmorrhage of which the patients complain may be the result of recent abortion or endometritis following it, and not directly dependent on the heart lesion. The fact that in more than half the cases the menstruation was unaltered would certainly seem to bear out this suggestion.

Within the last few months I have seen two women, both the subject of heart disease—one of mitral stenosis and one of mitral regurgitation. Both of these women came complaining of loss of blood, but on examination it was found that one of them was suffering from advanced carcinoma of the cervix and the other from a large uterine fibroid, which was subsequently removed by abdominal hysterectomy. Among the cases recorded in the above table, in all those who were suffering from great cardiac dilatation with enlargement of the liver and dropsy, the menstrual flow was unaltered or it was absent.

This is a matter of considerable interest, because there can be little doubt that in such cases there must be passive congestion of the pelvic viscera, and we have therefore an

opportunity of observing what are the symptoms, if any, of passive uterine congestion. If we take the cases where cardiac dilatation is most advanced, and consequently where passive congestion is most marked, as, *e. g.*, Cases 17, 20, and 42, we see that prolonged passive uterine congestion leads to amenorrhœa, though menstruation may persist unaltered for some time in spite of the congestion. In Cases 17 and 20 it is noted that while the menstrual loss persisted, it was unaccompanied by pain. Congestion of the uterus is a phrase less often heard now-a-days than formerly, but from a consideration of such cases as these there appears to be no reason to believe that passive congestion of the uterus, *per se*, causes any symptoms at all except perhaps amenorrhœa. Although there is a considerable amount of literature on the subject of the relation of heart disease to pregnancy, I have not been able to find any bearing directly on the subject of heart disease and menstruation.

In a pamphlet by Berthiot entitled 'Grossesse et Maladies du Cœur,' published in 1876, he relates a large number of cases of pregnancy and labour complicated by heart disease, and in seven of them states incidentally the condition of the menstrual function previous to pregnancy.

Of these seven, four suffered from mitral stenosis and incompetence and three from mitral incompetence alone. In four of these cases the menstrual flow was said to be regular and normal in amount, whilst in the three other cases it was irregular and scanty, the interval being more than twenty-eight days. It will be noted that none of them had suffered from menorrhagia, which supports the results obtained from my own series of cases.

There is another point which is perhaps worth noting, and that is the frequency of amenorrhœa during the attacks of rheumatic fever. In eight cases where attention was paid to this point, it was found that in seven of them menstruation ceased during the rheumatic attack, but in one it continued to recur regularly although the joint pains lasted for five months.

By a consideration of these cases we may, I think, also learn something concerning the bearing of heart disease upon fertility and the liability to abortion. I am fully aware that the histories of these cases do not allow of very accurate statements being made on this point, and that great caution is necessary in drawing conclusions. The great difficulty lies in the fact that it is almost impossible to be absolutely certain when the valves were first attacked, and therefore whether at the time of marriage heart disease was or was not present.

To eliminate as far as possible this source of error, I have selected twelve cases from Table I of married women who have had rheumatic fever on one or more occasions either before or immediately after marriage, and who, moreover, have had no attacks since. In these cases I think we may fairly assume that the valve lesion dated from the attack of rheumatic fever, and that therefore all such patients may, after this date, be considered to be suffering from valvular disease. The number of cases is unfortunately too small to make the deductions drawn from them of much value, but none of the other of the fifty cases fulfilled the conditions laid down above (Table II).

All the patients arranged in this table were the subjects of mitral disease, and at the time they came under observation were suffering from cardiac symptoms due to an imperfectly compensated valve lesion.

Among these twelve women the total number of children born was fourteen, and the total number of miscarriages was ten.

Two of the patients exhibited absolute sterility, and two others had miscarriages but no full-time children. In this country the normal proportion of sterile to non-sterile marriages appears to be 1 in 10, so that the fertility of women with mitral disease would seem to be slightly less than normal. It will be noticed, however, that some of the patients had only been married a comparatively short time, but still the number of pregnancies is small, and

TABLE II.—*Married Women with Mitral Disease who have had Rheumatic Fever before Marriage or Child-bearing, and who have had no attack since.* (The Cases are numbered as in Table I.)

Case.	Name.	Form of heart disease.	Age.	Duration of married life.	Rheumatic fever.	Number of children.	Number of miscarriages.	Remarks.
5	E. H.	Mitral stenosis	24	3 years	1 attack 4 years ago	1, 2 years ago	None	Some hæmoptysis during pregnancy; labour normal.
11	E. B.	„ „	31	12 years	1 attack 3 months after marriage	None	„	
12	J. J.	„ „	42	12½ years	1 attack 14½ years ago	3; last 5 years ago	2	1st miscarriage between 1st and 2nd child; 2nd miscarriage between 2nd and 3rd child.
14	E. O.	„ „	23	3 years	1 attack 2 years ago	None	2; both since attack of rheumatic fever	Not much blood lost at miscarriages.
18	S. C.	„ „	33	9 years	1 attack 10 years ago	2; last 5 years ago	None	No special troubles during pregnancies.
23	A. C.	Mitral incompetence	30	5 years	1 attack 13 years ago	None	1, 4 years ago	
28	M. R.	„ „	27	1½ years	1 attack 22 years ago	„	None	
29	M. B.	„ „	22	2½ years	3 attacks, 6, 5, and 4 years ago	1, 1½ years ago	1, 6 months ago	Pregnancy and labour normal. Says she lost a good deal of blood after her confinement.
31	E. S.	„ „	24	4 years	2 attacks, 10 and 6 yrs. ago	2; last 2 years ago	None	Confinements easy; not much blood lost.
33	M. R.	„ „	36	15 years	1 attack 16 years ago	2; last 12 years ago	„	
34	H. S.	„ „	28	3 years	1 attack 11 years ago	1, 8 months ago (stillborn)	4; last 3 weeks ago	Confinement easy; no post-partum hæmorrhage. Lost a good deal of blood at last miscarriage; not attended by a doctor.
41	A. B.	Mitral stenosis and incompetence	22	„	1 attack 7 years ago	2; last 4 months ago	None	Confinements easy; no flooding; no special discomfort during pregnancies.

would suggest that mitral disease led to some degree of relative sterility.

The number of years of married life among these twelve women was nearly seventy-four (73·5), or an average of six and one-third years each. The number of pregnancies was twenty-four (fourteen children and ten miscarriages), or an average of two each.

Of the ten women who had been pregnant five had had no miscarriages, while the other five had miscarried on one or more occasions. It is stated by Galabin that the proportion of miscarriages to full-time deliveries is as 1 to 5. Among these twelve women however, the proportion of miscarriages to full-time deliveries is as 10 to 14,—that is to say, among these twelve women the proportion of miscarriages to full-time deliveries was 3·57 times greater than usual.

The existence of mitral disease seems, therefore, to greatly increase the tendency to premature expulsion of the ovum.

Though, as is well known, serious accidents may happen before, during, or after delivery to women suffering from heart disease, in these particular cases there was no history of any serious trouble experienced by the patients either while pregnant or during or after labour. In only one of the cases was hæmoptysis noted during pregnancy. It is not my purpose, however, to enter into any discussion on this point, as the histories elicited from the patients do not furnish sufficiently complete data from which to work. If they show anything they show that women who have valvular disease may pass safely through the period of gestation and parturition and escape all the well-known accidents which have been so often described. Since writing the above, I have read a paper by Dr. Ch. Vinay published in the 'Archives de Tocologie et de Gynécologie' for November, 1893, which further illustrates the tolerance which many women who are the subjects of valvular disease of the heart exhibit to pregnancy and delivery. During 1891 and 1892 he auscultated all

patients admitted into the maternity hospital, 1700 in number, and detected valvular disease in twenty-nine cases. In twenty-four of these cases there was either mitral stenosis or mitral incompetence or both combined. In one case there was aortic incompetence and in one case tricuspid incompetence, whilst in the remaining three cases there was combined aortic and mitral incompetence.

In only four of these cases was there any heart trouble during pregnancy or labour, and in only one of these cases was it at all serious. This was a case of mitral stenosis and regurgitation, and the patient suffered from dyspnœa, cyanosis, and œdema of the legs. She was delivered of twins, the delivery being followed by rather free post-partum hæmorrhage. She, however, made a good recovery.

The fact that the great majority of women who suffer from valvular disease of the heart pass safely through the period of pregnancy and labour is important, and is apt to be overlooked unless systematic examination of the heart be made in all cases.

Dr. JOHN PHILLIPS said the paper had much interested him, owing to his having for some time been engaged in attempting to ascertain the truth of the assertion that women with heart disease suffered from menorrhagia. No reference was made to the subject in the literature of the last twenty years, and even the elaborate papers of MacDonald, Porak, Schlayer, Vinay, and Leyden upon heart disease and pregnancy only occasionally alluded to the menstrual history of patients mentioned by those authors. He had examined the hearts of 656 women consecutively, whose ages varied between eighteen and forty-four, in the out-patient room at King's College Hospital. In this series only sixty-nine presented cardiac murmurs of any kind, and fifty-two of these were evidently anæmic, and therefore inadmissible, leaving seventeen cases of undoubted organic disease. Of the seventeen, eleven applied during pregnancy for relief from symptoms due to some compensatory disturbance, and nine of these were followed up and their menstrual history reported upon. The remaining six patients were nulliparæ, four suffering from mitral disease, and two from aortic obstruction. In none of the fifteen cases was there at any menstrual epoch sufficient hæmorrhage to be termed menorrhagia. In the

majority of them there was a tendency to amenorrhœa, and in the two aortic cases the patients attended in consequence of amenorrhœa and breathlessness. Cases in private practice observed by Dr. Phillips entirely supported the idea of menstruation being rather diminished than increased in amount in women with cardiac disease. He quite agreed with Dr. Gow in all his conclusions, with the exception that he thought perhaps a woman conceived just as readily with a damaged heart as with a healthy one. The tendency to abortion in women with cardiac disease was undoubted, but this scarcely came within the scope of the paper under discussion.

Dr. Peter Horrocks recognised the value of the paper, but he pointed out that there was another method of approaching the subject, and one which offered a far better hope of obtaining accurate knowledge, and that was a careful comparison of the menstrual history of a patient with the condition of her heart as found post-mortem. And here he would make an appeal to his surgical and medical *confrères* that they would insist on a careful record of a patient's menstrual history being included in every clinical report as a matter of routine. It was very disappointing when an interesting condition of things was found post-mortem, to discover in the clinical reports absolutely no mention of the menstrual history, or at most a very meagre account. He pointed out that nearly all the cases brought forward by Dr. Gow were said to be suffering from mitral stenosis; obviously the first effect of this would be on the lungs, and this was found to be so, as they suffered from shortness of breath, bronchitis, &c. Now in order that the uterus and pelvic viscera should be affected it was necessary for the cardiac lesion to produce not only lung symptoms but also symptoms revealing tricuspid incompetence, such as dropsy or œdema. In only six out of the fifty cases was this sign present, namely in Nos. 11, 17, 20, 32, 41, and 49. Hence it might be argued that it was not surprising that menstruation had not been profuse. But in those six cases menstruation was either absent or scanty, or not excessive. Now the text-books taught that heart diseases, speaking broadly, were a cause of menorrhagia. He believed that this statement was founded upon reasoning by analogy, namely, that because heart disease produced congestion of various viscera, therefore it would cause congestion of the pelvic viscera, and so menorrhagia would probably result. But Dr. Gow's cases tended to quite an opposite conclusion, and he believed Dr. Gow was right. He then detailed several cases in which careful post-mortem examinations had revealed extensive disease, including aortic, mitral, and tricuspid valvular lesions, in which the periods had been absent or scanty, or at all events not altered since the period when the heart disease had presumably begun. If the circulation were impeded on the venous

side one would have expected that menstruation would have been lessened or stopped, owing to the deficient oxygenation of the blood in the ovaries. But what was wanted were the facts of the case, and he thought that they were in favour of Dr. Gow's conclusions.

The PRESIDENT desired to call attention to the admirable method of Dr. Gow's research. The same subject had been treated of in a paper read to the Royal Medical and Chirurgical Society recently. The author of that paper had investigated the question at a women's hospital. He took patients who came to the hospital because they supposed that something was wrong with their reproductive organs, and ascertained the frequency of cardiac disease in them. Such a method would show a greater frequency of functional disturbances of the genital organs associated with heart disease than was actually the case. Dr. Gow, on the other hand, took patients with heart disease, and inquired into the frequency of menstrual disturbance in them. This was a method the result of which might be depended on. Dr. Gow's research filled up a blank space in their knowledge of menstrual disturbances as well as of sterility and abortion. He (the President) had made some observations on the effect of venous congestion from heart, lung, and liver diseases on menstruation, and his results in the main agreed with those of Dr. Gow. Dr. Gow's statement that text-books said that heart disease caused uterine hæmorrhage he believed was correct as to most of them; but the clinical lectures of the late Dr. Matthews Duncan was an exception—his book did not contain this error.

Dr. GRIFFITH had seen one case which he believed to be an exception to the rule stated by Dr. Gow. A tall, well-made servant about twenty-five years of age came as an out-patient to the Samaritan Hospital some years ago, suffering from menorrhagia, profuse and lasting about ten days; being single, the usual remedies were tried without a vaginal examination, and without benefit. Something in the history of the case led him to examine the heart, and mitral regurgitation was found. In consequence of this no vaginal examination was made, and the use of ergot, &c., was stopped. Soon after this she married and went to live at Dover, and the doctor who attended her was good enough to write and inform him that she had two children, her heart trouble getting worse. The case was one he hesitated to bring forward for two reasons: in the first place he had to depend on his recollection of the circumstances, which occurred some years ago; secondly, he had not, for the reasons stated, made any examination of the uterus.

APRIL 4TH, 1894.

G. ERNEST HERMAN, M.B., President, in the Chair.

Present—53 Fellows and 4 visitors.

Books were presented by Sir H. W. Acland, Dr. Muret, Messrs. Wright and Co., and the Société des Sciences Médicales de Lyon.

George A. H. C. Berkeley, B.A., M.B., B.C.Cantab.; Woodley D. Betenson, L.R.C.P.Lond.; David Brown, M.D.Lond.; Lennard Cutler, L.R.C.P.Lond.; John W. Dickson, B.A., M.B., B.C.Cantab.; David L. Hamilton, L.R.C.P.Ed. (Great Missenden); Wilfrid E. Hudleston, L.R.C.P.Lond.; James P. James, L.R.C.P.I.; Sidney H. Lee, B.A., M.B., B.C.Cantab.; Edgar Nicholson, M.R.C.S.; and Thomas G. Stevens, M.D., B.S.Lond., were admitted Fellows of the Society.

Hedley Coward Bartlett, L.R.C.P.Lond. (Saffron Walden); Henry W. Drew, F.R.C.S. (Croydon); Charles Herbert Fazan, L.R.C.P.Lond. (Wadhurst); Charles R. M. Green, L.R.C.P.Lond. (Calcutta); Edward Horne, M.R.C.S. (Wallingford); Herbert J. Ilott, M.D.Aber. (Bromley, Kent); Albert Stanley McCausland, M.D.Brux. (Swanage); John McOscar, L.R.C.P.Lond. (Watlington); William Henry Mondelet, M.D. (Brighton); Clement Pound, L.R.C.P.Lond. (Odiham); Horace Savory, M.A., M.B., B.C.Cantab. (Hertford); Archdale Lloyd Sharpin, L.R.C.P.Lond. (Bedford); and Montague Tench, M.D.Brux. (Gt. Dunmow), were declared admitted.

The following gentlemen were proposed for election :— Reginald T. H. Bodilly, L.R.C.P.Lond. (South Woodford) ; Andrew Bradford, M.D., C.M.Toronto (Lanark, Ontario) ; and Charles Ernest Goddard, L.R.C.P.Lond. (Wembley).

FŒTUS AND PLACENTA REMOVED BY LAPAROTOMY, FROM A CASE OF EXTRA-UTERINE GESTATION.

By William Duncan, M.D.

The patient, aged 34, multipara, was admitted to the Middlesex Hospital on February 14th, 1894, with the following history.

Her last child was born in November, 1889, since then the periods were quite regular until November, 1893, when that period was missed altogether. A month later she had a show at the proper time, and the loss, which was of a brownish colour, had continued on and off until her admission. A few days before Christmas, when in bed, she was seized with a severe pain in the back, and fainted away for ten minutes. She sent for a doctor, who said she had inflammation, and ordered hot fomentations. Since then, up to her admission to hospital, she has been in bed with pain and irregular discharge of blood.

On admission there is found in the lower abdomen an irregular swelling, separated in the middle line by a depression ; the tumour on the left side feels like a somewhat enlarged uterus ; that on the right side is larger, more elastic, and less defined.

Auscultation reveals nothing. The breasts are tender, and some secretion can be squeezed out.

Per vaginam.—The os uteri was found to be pushed forward and high up by a large cystic swelling, filling up the pouch of Douglas and depressing the vaginal roof. Extra-uterine pregnancy was diagnosed, and abdominal

section was performed on March 22nd. When the abdomen was opened, the tumour on the right side consisted of the placenta with the exception of a small portion at the upper part; this was incised, when amniotic fluid gushed out; two fingers of the left hand were inserted, and the fœtus seized and extracted by the feet. The passage of the head tore the placental tissue, and there was free bleeding until the vessels were seized with large clamp forceps. An attempt was then made to stitch the edge of the sac to the parietal peritoneum, but sudden and profuse hæmorrhage took place from the deeper parts of the sac, so that Dr. Duncan decided at once to peel off the placenta; this he did whilst the abdominal aorta was compressed by Mr. Hulke. The placenta was removed without difficulty, and then the sac could be seen passing down to the bottom of the pelvic cavity; it was firmly stuffed with iodoform gauze, six yards in all being used; no further bleeding occurred. The edge of the sac was fastened to the parietal peritoneum, and the abdominal wound above the sac closed in the usual way. Altogether the patient did not lose more blood than most women do at an ordinary confinement.

From the time of the operation the patient's pulse became extremely rapid; her temperature rose to 105° on March 25th; she was delirious, and died exhausted on the sixth day after the operation. The gauze stuffing the sac was removed on the third day, and was only just slightly blood-stained.

Post mortem there was only a very slight amount of peritonitis, where the sac was stitched to the abdominal wall.

Dr. Duncan said he considered the patient died from iodoform poisoning, and that in another case he would stuff the sac with kreolin gauze.

Dr. Champneys said that, while congratulating Dr. Duncan on his escape from serious hæmorrhage in removing the placenta, he hoped that Fellows would not go away with the idea that this was a safe proceeding. On the contrary, in many recorded

cases the bleeding had proved uncontrollable, and the patients had lost their lives.

Mr. Alban Doran asked Dr. Duncan if the pulse was very high in his case of suspected iodoform poisoning. This symptom was noted by Slaviansky, Elischer, and others, many years ago ('Centralblatt f. Chirurg.,' vol. xiv, 1887, p. 234). Mr. Doran had observed high pulse in two cases of abdominal section under his own care, where iodoform had been freely applied to the abdominal wound, and in a third case where iodoform had been freely stuffed into a large pelvic abscess. The pulse grew slower when the iodoform was left off, but all three cases were convalescent, and the diminished rate of the pulse might be in great part due to the increased strength of the patient.

The President asked if it was necessary to stitch the sac to the abdominal walls. This was quite useless unless it was done accurately and thoroughly, and to do this was tedious, and might be difficult. He thought it was unnecessary; if the sac were plugged with gauze, the gauze was soon shut off by lymph from the rest of the abdominal cavity. In Dr. Duncan's case it seemed as if it were the dragging on the sac during the stitching that caused the hæmorrhage. If so, the stitching increased the danger. He had seen one case of iodoform poisoning from stuffing a bleeding pocket in the pelvis with iodoform gauze; there was extreme rapidity of the pulse, delirium, involuntary passage of urine and fæces, but no vomiting or abdominal tenderness or distension. After removal of the gauze the patient quickly improved, and got quite well. Had he a case like Dr. Duncan's with symptoms of iodoform poisoning during life, and signs of peritonitis on post-mortem examination, he should attribute the death to the peritonitis, and not to the iodoform poisoning.

Dr. Ettles asked Dr. Duncan as to whether there was—1. Dischromatopsia. 2. Albuminuria. 3. The "iodoform" delirium present in his case. In a case of partial iodoform poisoning which had come under his notice, dischromatopsia was a marked symptom, and if it were generally present in such cases it would be useful as a monitor of impending poisoning.

Dr. Fenton requested Dr. Ettles to explain the meaning of the term used.

Dr. Ettles said that by dischromatopsia he understood an alteration or aberration of the patient's colour sense, due usually to toxic causes, the chief subjective sensation being that external objects had a dominant colouring, usually yellowish, but often red (erythropsia), and having a coloured outline.

Dr. Duncan in reply said that, notwithstanding the risks of removing the placenta at the time of operation, he felt disposed to treat his next case in the same way. He could not agree

with the President with regard to its not being important to stitch the edge of the sac to the parietal peritoneum, and he thought a little time was well spent in the careful coaptation of the two. He was confident, as there was only a trace of peritonitis found post mortem, that the patient died of iodoform poisoning. The patient had during the whole time she lived a very rapid pulse (150 to 160); there was also the peculiar delirium, but unfortunately the presence of dischromatopsia was not looked for.

CASE OF CYCLOPS.

Shown by Dr. Ettles.

A committee, consisting of Drs. Giles, Tate, and Ettles, was appointed to report on this specimen.

HYPERTROPHIED NYMPHÆ AND CLITORIS.

By William Duncan, M.D.

Dr. William Duncan showed this specimen on January 3rd, 1894 (p. 3), which he had removed by the knife from a single woman, aged 25, who in the summer of 1891 was a patient in the Lock Hospital, with an abscess in the left groin and left labium, together with a vaginal discharge. No history of syphilis could be obtained, but there was a small patch of psoriasis on the lower abdomen, and also a scar in front and on the under surface of the right half of the tongue, where the patient said she had a small sore place. There was marked enlargement of the vulva, chiefly affecting the labia minora, which appeared to be continued down to the posterior part of the vulva, where they met on the perineum. On their inner surface were several excavated ulcers with irregular margins. The hypertrophied nymphæ were of a whitish colour.

On December 18th, the patient being anæsthetised and in the lithotomy position, the whole of the nymphæ and the clitoris were removed by the knife; the spouting vessels were tied with fine catgut, and the edges of the vaginal mucous membrane united with the skin edges. The margin of the urethral orifice was united with the adjacent skin.

Subsequent progress.—Owing to the unhealthy condition of the parts there was failure of primary union in great part of the incision, and healing took place by granulation and cicatrisation.

Mr. Alban Doran believed that many diseases which deformed the vulva were originally akin to common skin affections, eczema, psoriasis, &c. The muco-cutaneous portion of the vulva was first attacked, and the constant irritation from urine, smegma, and vaginal mucus modified the eruption; ultimately the labia minora became œdematous or otherwise morbid. Many cases described as "lupus minimus" seemed to him to be eczema around the meatus in women who passed urine loaded with urates.

Report on Dr. Duncan's Specimen of Hypertrophied Vulva. Shown January 3rd, 1894 (*p.* 3), *and described above.*

The tumour consists of the two labia minora, clitoris, and part of mons Veneris. The two labia are greatly hypertrophied, measuring four inches wide, two inches deep, and one inch thick; the surface is irregular and corrugated. On the inner surface of the right labium and on both surfaces of the left are a number of shallow punched-out ulcers, varying in size from one eighth to half an inch in diameter. There is no induration around the ulcers. There are several similar ulcers around the clitoris.

A microscopical vertical section through one of the ulcers shows the squamous epithelium somewhat irregularly thickened. Over the situation of the ulcer the epithelium is entirely absent, and the floor of the ulcer has an irregular ragged appearance, with small round-celled infiltration of an inflammatory nature.

In the deeper part of the section, away from the ulcer, the squamous epithelium is seen to dip down. There are separate islets of squamous epithelium encapsuled, and with a small-celled infiltration round. None of these separate islets are arranged in the form of "nests."

P. Horrocks.
William Duncan.
Walter W. H. Tate.

ON CASES OF ASSOCIATED PAROVARIAN AND VAGINAL CYSTS, FORMED FROM A DISTENDED GARTNER'S DUCT.

By Amand Routh, M.D., B.S., M.R.C.P.

(Received January 23rd, 1894.)

(*Abstract.*)

Details of three cases of the above are given, and also of two analogous cases of patency of the whole length of the duct, with an anterior opening allowing free discharge, and thus preventing distension of the duct along its course.

Comparison is drawn between such cases and those of distended but imperforate Müller's ducts.

Evidence adduced from these cases is thought to establish, or at least to render plausible, the following propositions:

1. That Gartner's duct can be traced in some cases in the adult female from the parovarium to the vestibulum vulvæ, ending just beneath and slightly to one side of the urethral orifice.

2. Homology tends to show that Max Schüller's glands are diverticula of Gartner's ducts, just as the vesiculæ seminales are diverticula of the vasa deferentia. Some evidence is given that Skene's ducts are not necessarily identical with the anterior termination of Gartner's ducts (as most of those who have traced Gartner's duct to the vestibule have thought), but that Skene's ducts lead directly and solely from Max Schüller's urethral glands, Gartner's ducts being continued to the vestibule, behind, but parallel to, Skene's ducts.

3. That Gartner's duct, if patent, may become distended at any part of its course, constituting a variety of parovarian cyst

if the distension be in the broad ligament portion, and a vaginal cyst if the distension be in the vaginal portion. The cases described are instances of the association of both of these cysts, owing to simultaneous patency and distension of both portions of the duct.

4. Attention is drawn to these cases as affording explanations of some obscure cases of profuse watery discharge from the vagina, not coming from the uterus or bladder.

5. The question of treatment is also approached, and the opinion is expressed that where the whole duct is distended the vaginal part of the cyst may be laid open as far as the base of the broad ligament, and the broad ligament portion encouraged to contract and close up.

The following cases are examples of a condition probably very rare, namely, a vaginal cyst communicating with a cyst between the layers of the broad ligament, and the explanation offered in this paper is that these associated cysts are the result of distension of a persistent Gartner's duct as it passes through both structures.

Case 1.—Miss C. C—, aged 25, first saw me in 1889 for coccygodynia and bearing down, due to pelvic congestion. She improved rapidly, but over-walked herself in January, 1890, and for a few weeks suffered as before. Two years and a half afterwards, November, 1892, she consulted me again for pain over the right ovarian region, and a profuse yellow watery discharge, which was occasionally offensive. Walking caused great pain down the right leg and in the right side. The abdomen was somewhat distended, and the muscles resistent over the right half of the abdomen. *Per vaginam* the uterus was mobile, but pushed over to the left by a somewhat elastic mass on the right side of the pelvis, situated apparently between the layers of the broad ligament. Bimanually this mass could be felt to be partly mobile, elastic, tender, and separate from the uterus, which by means of the sound could be moved to some extent independently of the broad ligament tumour.

In the vaginal wall, running from the base of the right broad ligament, starting from a spot slightly to the right side of the cervix, there was an elastic ridge, somewhat irregular in outline, which passed forwards and towards the middle line, becoming lost a little to the right of the urethra, about three-quarters of an inch behind the base of the vestibule. I could not find out where the discharge came from, though I noticed that the upper part of the vagina was free from discharge whilst the vulvar orifice was always moist, and soiled by a somewhat viscid, yellowish, offensive secretion.

A fortnight later the patient suffered severe throbbing pain, and the temperature rose nightly to 101° or 102° F. The vaginal ridge had then become larger, tenser, and more elastic, and evidently contained fluid reaching very nearly to the vaginal outlet in the middle line of the vaginal roof.

In a few days the portion of the vaginal cyst near the cervix was found to be more swollen, being about the size of a thumb, but the rest of the vaginal ridge seemed to consist of several cysts, apparently intercommunicating. There seemed also to be definite communication between the vaginal cyst and the broad ligament tumour, from the fact that pressure upon the vaginal cyst caused its contents to pass backwards, whilst straining or coughing immediately refilled it.

The patient went into a nursing home, and was examined under ether. The vaginal cyst was then found to be collapsed along its whole length; the broad ligament tumour was very distinctly made out, and was thought to be a broad ligament parovarian cyst, the vaginal cyst being presumably a patent Gartner's duct communicating with the cyst cavity. At the end of the examination, as the patient was regaining consciousness, she coughed, and bore strongly down, causing a quantity of yellowish offensive pus to come out of a minute hole not previously seen, just beneath and to the right of the urethral orifice at the base of the vestibule. A small probe passed down this

abnormal orifice for three-quarters of an inch, and the passage was laid open as a rectal fistula would be. The openings of Skene's ducts just within the urethral orifice were quite perceptible.

I then opened the main vaginal cyst about 2 inches up the vagina, but was not able to pass a probe for any distance either backwards or forwards.

Offensive pus continued for some days to come away from both of these places, but mainly from the anterior orifice; indeed, I do not think I really opened the main cyst posteriorly on the first occasion. A few days later I succeeded in passing a probe along the whole canal from the anterior orifice, and subsequently a director; and, under ether, freely laid open the vaginal cyst by means of a Paquelin's cautery knife, letting out much pus, which welled freely out of the upper end of the incision at the base of the broad ligament.

The duct thus laid open was lined by smooth membrane, but no microscopic examination was made.

A sound passed into this upper opening near the cervix went a distance of five inches upwards and outwards, and was evidently inside a cyst cavity in the broad ligament.

The opening was enlarged to admit the finger, which could be passed into the cyst behind the vagina, and could make out that the lining membrane was smooth, and that the cyst was between the layers of the broad ligament. *Per rectum* the examining finger passed well behind the cyst cavity, and could then detect a sound passed into the parovarian cyst from the vagina. The cavity was washed out with iodised water, and a drainage tube inserted.

For nearly five weeks the purulent fluid continued to come away, speedily losing its offensive odour and becoming daily more watery, and at the upper end the sides of the vaginal cyst tended to unite again over the drainage tube, which was gradually shortened and finally removed, leaving a canal in the vaginal wall about an inch long (March, 1893) on the right side of the cervix.

November 7th, 1893.—A rut or trough is to be felt in

the vaginal wall to the right of the vaginal portion, leading into a short canal an inch long. The canal now only admits a large sound, and ends in a cul-de-sac. It is lined by a bright red membrane. The uterus lies in its central position, and nothing abnormal can be felt in the right broad ligament region. The patient feels perfectly well.

This is believed to have been a case of distended Gartner's duct, where the contents finally suppurated. It is probable that at first the vaginal part of the duct was impervious, but had become gradually opened up by the pressure of the contents of the distended portion in the broad ligament where the pain first began.

I have only been able to find two other cases of associated broad ligament and vaginal cyst, one described by Watts in 1881, and a second by Veit in 1882.

A short account of each will be given.

Case 2.—Watts's patient had a vaginal cyst which bulged from the anterior vaginal wall in the position of a urethrocele. The urethra was, however, quite normal.

He laid open the cyst *per vaginam*, and to his surprise was able to pass a probe several inches without the slightest resistance. The probe passed to the patient's left side, and its tip was easily felt at a point midway between the umbilicus and the left anterior superior iliac spine. Watts thought this probe had penetrated to the peritoneal cavity, but I think it pretty clear that, as in my case, it was really between the layers of the broad ligament, where there was almost certainly some distension of the duct not noticed at the time, as it doubtless speedily collapsed when the vaginal cyst was opened.

Case 3.—Veit's case (1882) was that of a married multipara, aged 47, who had a large vaginal cyst, which made micturition difficult, owing to pressure upon the urethra. The cyst bulged out between the labia majora as large as a child's head.

The uterus was pushed over to the left by a tense elastic swelling in the right broad ligament, which clearly communicated freely with the vaginal cyst.

The case was treated by incision of the vaginal cyst, draining both it and the broad ligament cyst, and by cutting out a large piece of the lining membrane of the vaginal cyst to prevent reclosure. Cholesterine crystals were found in the fluid. The epithelium was flattened in type.

The finger could be passed into the broad ligament cyst, and the ovary could be felt on its posterior and outer surface.

Such cases have to be distinguished from a case like the following, which has many symptoms in common, but is clearly of a different character, being one of double vagina and uterus, imperforate on one side.

Case 4.—Miss T. P— was a patient of my father, who kindly permitted me to see her, and whose notes are here reproduced.—Aged 17. Is constantly "unwell," discharge being grumous and somewhat offensive. Suffers much from pruritus and pelvic discomfort.

February, 1891.—On examination the hymen is present, but very dilated. The uterus is rather larger than normal. Between the uterus and the left side of the pelvis is a tumour, larger than the uterus, and mobile, somewhat behind the level of the broad ligament.

April, 1891.—In spite of vaginal injections the discharge persists, and continues to be very offensive. On examination, the odour from the vagina is very foul; on the left side of the vagina, reaching halfway down, a swelling is felt like a vaginal cyst, but no aperture opening into vagina can be detected, though it seems certain that one is present. The uterus is apparently normal.

June, 1891.—No change, except that an opening into the cyst is discovered anteriorly.

Patient was taken into a Nursing Home, and the vaginal cyst opened along the side of vagina to the level of the external os uteri. As the parts were very vascular the

vaginal cyst was opened by passing an india-rubber tube along its canal, and bringing it out at the top of the vagina, tightening it, and allowing it to work its way through, imitating one of Allingham's methods for fistula in ano.

Later on, the sound was passed upwards and backwards into the body felt to the left of the uterus, and the finger could also be passed along the opened up canal, and the circle of the dilated neck of the distended half of the double uterus could be felt. The case, therefore, was clearly one of uterus bicornis septus with double vagina, the left half of the vagina being closed near the vulva. A drainage-tube was passed into the uterus (left half), and kept in for some weeks.

This diagnosis was confirmed in August, 1891, when the vaginal canal leading to the left external os uteri was found to admit the tip of the finger for over an inch. The finger could then detect a normal external os uteri, and in January, 1892, the sound showed that the left half of the uterus was two and a half inches long and retroverted, whilst the right half was the same length and anteverted. The patient is now quite well.

Where Müller's ducts have not combined by absorption of their intervening septum, as in this case, Freund has stated, and Winckel agrees with him, that one duct may take a spiral course and become anterior to the patent vagina, formed out of the other Müller's duct. This would make the diagnosis between a distended Müller's duct and a similar sized distended Wolffian or Gartner's duct more difficult.

There are many points of interest in connection with a distended Gartner's duct. Its position whilst between the layers of the broad ligament is well known.

It is agreed that most parovarian cysts arise from distension of one of the vertical tubules of the parovarium, and that cysts so formed are rarely present before the age of seventeen, when the changes of puberty set up some activity in the vestigial remains of the Wolffian body.

The three cases described above seem to prove that

sometimes the longitudinal tube of the parovarium running at right angles to the vertical tubules may become distended into a cyst, and Doran alludes to such a possibility. Usually the longitudinal tube thus distended would not be patent beyond the limits of the broad ligament, and the resulting parovarian cyst would be indistinguishable from a parovarian cyst due to distension of one of the vertical tubules. If, however, the longitudinal tubule, Gartner's duct, were patent along that part of its course which lies in the antero-lateral wall of the vagina, the condition would be precisely as was found in the three cases described above, viz. a parovarian cyst formed out of the broad ligament portion of Gartner's duct, with a channel leading from it, along the vaginal continuation of the duct, towards the base of the vestibule, forming a more or less continuous cyst along the vagina (see diagram, p. 161).

The following case occurring in the practice of Mr. Milton, of Cairo, is not identical with the preceding three cases, inasmuch as, owing to patency of the duct at its vulvar termination, there was free discharge, preventing any distension of the duct along its course. It is also interesting from other points of view, especially as regards the treatment adopted, which I do not think was very satisfactory, merely masking and not curing the abnormality.

Case 5.—The case was that of an Egyptian fellah woman, aged 30, who from her earliest recollection had been subject to a watery vaginal discharge. At the age of thirteen she married, became pregnant, and was delivered of a healthy child, the discharge continuing during the whole pregnancy. On vaginal examination a very minute orifice, admitting only a catgut guide, was found on the vesico-vaginal septum, a little to the right of the middle line, and half an inch posteriorly to the vesical extremity of the urethra. From this issued, drop by drop, a pellucid fluid, to the amount of about two ounces per diem, having a specific gravity of 1026, and containing much

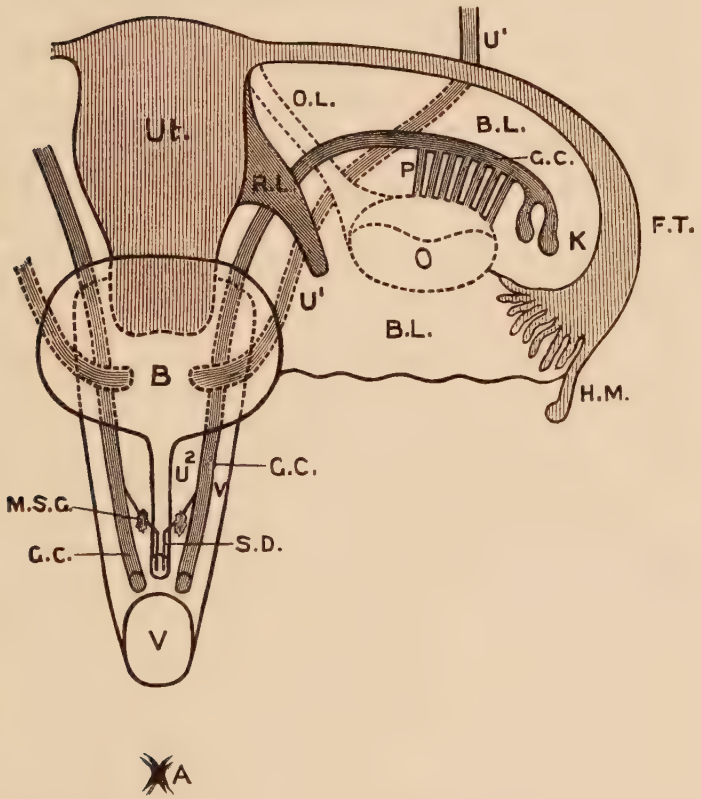
albumen, with some chloride of sodium. Urea and urates were absent. A fine urethral bougie, introduced with great difficulty, passed directly backwards along the vesico-vaginal septum, and then, following to all appearance the line of the ureter, penetrated to the whole of its length in the direction of the right kidney. The patient was most anxious to have something done to stop the constant discharge.

Mr. Milton decided not to attempt to close or destroy the canal, but to divert its opening into the bladder, so that its contents might flow away unnoticed with the urine. This was easily effected by separating a tongue of tissue composed of the whole thickness of the vesico-vaginal septum, and containing the orifice and first inch of the duct, tucking it up into the bladder, and closing the vesico-vaginal septum beneath it. Twenty-four hours after this operation was performed, the patient complained of severe pain in the right lumbar region; this pain lasted for a few days, and required morphia for its relief. It was very probably due to retention of the contents of the canal from a kink at the point where it had been turned up into the bladder. The patient recovered completely, and left the hospital free from any vaginal discharge, but with an albuminuria, which in the future may, he says, greatly trouble some learned physician.

The question of the course and termination of Gartner's duct after it leaves the broad ligament has not yet been definitely settled. Many observers have traced it along the broad ligament from its closed extremity, usually called Kobelt's tubes, above the ovary and the vertical tubules, downwards and inwards into the cervix, or into the vagina at the sides of, or anterior to, the cervix, but its course after that position has been reached is disputed.

Max Schüller, Fischel, Dohrn, Rieder, Skene, and others believe that it never persists as far forward as the urethra.

The opposite view is taken by many. Thus Kocks of Bonn (and Garrigues acquiesces with him) declared that in 80 per cent. of adult females the remains of Gartner's



UT. Uterus.
B. Bladder.
U^1. Ureter.
U^2. Urethra.
S.D. Skene's ducts.
V. Vagina.
G.C. Gartner's canals.
M.S.G. Max Schüller's glands.
K. Kobelt's tubules.
A. Anus.
B.L. Broad ligament.
O. Ovary.
O.L. Ovarian ligament.
R.L. Round ligament.
F.T. Fallopian tube.
H.M. Hydatid of Morgagni.
P. Vertical tubes of parovarium.

(Modified from Skene.)

duct could be found as two small tubules opening just posterior to the meatus urinarius.

The sow is specially stated to have persistent Gartner's ducts, and Dohrn states that in fœtal kittens they are always persistent along the vagina.

Cases of vaginal cysts along the presumed course of a persistent Gartner's duct are very numerous, and are not alluded to here.

Many observers have examined the lining membrane of these vaginal cysts, and the epithelium is variously described as pavement and cylindrical, whilst Johnston figures columnar and pavement cells in different sections of the same cyst. This diversity of epithelial lining is explained by Rutherfoord in his exhaustive paper on "Vaginal Cysts," read at this Society in 1891, as being due to pressure of the contents flattening the original cylindrical form, so as to resemble the endothelium, such as is found in a lymph channel. Chalot, writing in 1892, believes that all cysts in the antero-lateral wall of the vagina, extending upwards to the base of the broad ligament, if lined with cylindrical epithelium, are invariably Wolffian.

A very valuable work on "The Duct of Gartner," by Bland Sutton, was published in 1886, giving his results of examination of seventy cows; and Mr. Alban Doran, in his review of this work, points out that as Gartner's ducts are generally admitted to be the homologues of the vasa deferentia, and as the vesiculæ seminales are diverticula of the vasa, close to their termination on the floor of the prostatic urethra, it follows that the Max Schüller's glands of the female urethra are the homologues of the vesiculæ seminales, and he agrees with Bland Sutton in thinking that in woman, as in *Bos*, Skene's tubes represent the anterior termination of Gartner's ducts. This latter conclusion is not, I think, correct.

When this view was expressed in 1886, no cases had been published of a persistent Gartner's duct opening at the base of the vestibule; but the cases now given, and other cases of cysts formed out of the vaginal portion of

Gartner's ducts, show that the opening of Skene's ducts and the opening of Gartner's ducts are not necessarily identical in situation.

In my own and Mr. Milton's cases the duct leading from the broad ligament was traceable along the whole length of the vagina, from the base of the broad ligament near the cervix forwards and inwards to a point at the base of the vestibule immediately below, and in both cases slightly to the right side of the urethral orifice, just as Kocks believes to obtain in 80 per cent. of adult females, and not, as Doran and others have described, opening just inside the urethral orifice in the position of Skene's ducts. Almost all observers who have been able to trace persistent Gartner's ducts as far forwards as the urethra, describe the opening as being just behind and to one side of the urethral orifice. The actual opening may vary much in different cases, and may in a few cases really open into Skene's tubes, and be a source of an obscure albuminuria. Freund, in describing one case of patency of the vaginal part of the duct, places the opening on the urethral ridge, three-tenths of an inch behind the urethral orifice.

Realdus Columbus, writing in 1559, gives an interesting account of a case observed by him. The following is a translation—(for original Latin see foot-note *) :

* Realdus Columbus, 'De Anatomicâ,' p. 268:—"Proposito enim mihi Androgyno, seu hermaphrodito, subiecto in quam eodem mare, et foemina, superioribus et enim annis foeminam mihi videre contigit, quae praeter vuluam, membro quoque virili praedita erat, quod tamen non erat admodum crassum. Quãobrem in eius anatome generationis vasa accurate admodum per uestigaui, vasa seminaria, testesq'; considerans, nunquid vlla inter haec communio, et consensus adesset: Tandem hoc comperi, vasa quidem praeparantia, ab aliarum foeminarum praeparantibus vasis non differre; sed deferentia differre: nam bipartita erant, et exbinis quaterna natura genuerat, ex quibus duo, quae etiam maiora erant, ad matricis concauum destinabantur, reliqua duo ad penis radicem, qui glandularum parastatum expers erat. Hoc tam admirabile uisu, et speculatu erat quàm quod maxime: quo pacto natura prudens, sagaxq'; locum satis tutum selegerat, per quod uasa haec ad penem deferri possent: et quem admodum meatum, qui in ipso est pene, perforarent: qui meatus in alijs tum semini, tum lotio cõmunis existit, hic

"The case of an androgynus or hermaphrodite, in whose one person the male and female alike are combined, having been brought to my notice, I may mention that it fell to my lot formerly to see a woman, who in addition to a vulva was endowed with a male organ as well,—not, however, a very thick one. Accordingly in the anatomy of this person I investigated the vessels of generation very accurately, the seed-vessels (ovarian blood-vessels) and the testes (ovaries) marking whether there was any communication and agreement between them.

The result of my observations was that the spermatic (ovarian) arteries and veins did not differ from that of ordinary women, but the ovarian ligaments did; for they were bipartite, and from the pair nature had developed

vero urinae nihil quicquàm opis afferebat; nam instar aliarum mulierum urina exibat. vterus autem, nec non vteri ceruix à caeterarum foeminarum matrice, colloq'; nihil distabat: sed in testibus discrimen erat; nã testes in hac crassiores erant, quàm in reliquis mulieribus: seq quoad situm ipsorum nullum discrimen depraehendi. Peni scrotum contiguum non erat, imo vero scroto prorsus carebat: et duobus musculis praeditus erat huius foeminae penis, non quatuor, vt in maribus perfectis. Praeterea penis huius hermaphroditi tenui pelle integebatur, nullum aderat praeputiũ, sed duo spongiosa corpora, per quae duae arteriae ferebantur, ab illis ortae, quae ad vesicã tendebant."

N.B.—The above translation is believed to be correct. I have had the advantage of the opinion of Mr. J. W. Hulke, F.R.C.S., whose note may here be quoted, with reference to the old anatomical terms used.

"The *vasa præparantia* are the 'vasa semen preparantia,' and are the *spermatic veins*. Cf. Bartholinus, 'Anat. Reformata,' p. 132, fig. explic., Tab. xxii; also Gibson, Thos., 'Anat. of Man's Body Epitomized,' 1688, p. 157; 'Of the Genitals in Women,' chap. xxiv; 'Of the Vasa Præparantia.' Here plainly the ovar. arteries and veins are intended. Riolanus says of these that in females 'et vena et arteria bipartitæ finduntur.'

"The 'vasa deferentia' are *not* the Fallopian tubes, but the ovarian *ligament*, which was regarded by old anatomists as a vessel, and is their 'vas evacuatorium,' by which the female semen was conveyed from the ovary into the womb. The Fallopian tube was, by some, regarded as a spiracle, by which the fœtus *in utero* drew air for its breathing from the mother; by others it was considered to be a vent through which the fuliginous vapours forming in the womb escaped from it into the belly. Fallopus called it 'Tuba,' but does not seem to have rightly appreciated its true function, the human ovum being to him unknown."

two pairs, two of which, and these the larger, were attached to the hollow of the womb, the other two to the root of the penis, which was without a prostate gland. This (arrangement) was to the last degree admirable to look at and contemplate, showing how far-sighted and wise nature had chosen a sufficiently safe place by means of which these vessels might reach the penis, and pass through the orifice which exists in the penis itself. This orifice in other individuals serves alike for the semen and the urine; in this case, however, it is of no help to the urine, for this last finds its way out as in other women. The uterus, moreover, and the neck of the uterus as well, do not differ from the uterus and the cervix of other women; but as regards the testes there was a difference, for the testes (ovaries) in this case were thicker than in other women, but as regards the position of the latter I detected no difference. The scrotum was not attached to the penis,—in fact, the scrotum was altogether absent, and the penis of this female was endowed with two, not four muscles, as in the case of well-developed males. Moreover the penis of this hermaphrodite was covered with a thin skin; no prepuce was attached, but two sponge-like bodies, through which two arteries made their way, sprung from those bodies, which extended to the bladder."

It is difficult to credit the vague statement that these canals "ended at the root of the clitoris," for if homology is of any value, it would tend to prove that if the Wolffian duct ended in the female urethra at all, it would do so in the part corresponding with the first part of the prostatic portion, which in this case is in the usual position of the female urethra. No microscopical examination was possible in 1559, but the genital glands were in the usual position of ovaries, and there is no reason to think they were testes. The woman, therefore, was almost certainly not hermaphrodite, and we may assume the canals to have been persistent Gartner's canals.

It is recognised that vaginal cysts near the cervix may be due to a distended Gartner's duct, and if it be allowed

that Gartner's duct is sometimes present up to the base of the vestibule it will simplify the ætiology of many cysts in the anterior parts of the vagina. Chalot, the most recent writer on vaginal cysts, is convinced that Skene's ducts are quite distinct from Gartner's ducts, and gives one case in which he proved them to be so.

It is probable that the formation of the vaginal cysts in some of the above cases was secondary to the distension of the broad ligament portion of the duct, and that the vaginal portion of the duct was gradually opened up by the pressure of the fluid contents of the broad ligament portion, under the influence of coughing and other intra-abdominal pressure.

Patent Gartner's ducts may be more frequent than is imagined, and may account for some of those cases of watery vaginal discharge the origin of which is obscure ; for in all the cases which were discharging, the hole was so minute that it could only be detected when fluid was actually exuding through it.

In this connection a case related by Mr. Lawson Tait is interesting.

Case 6.—A patient aged 60 consulted him for profuse, recurring, clear watery discharge from the vagina for the last thirty years, the cause having been variously diagnosed as hydrorrhœa uteri, polyuria, &c. He discovered that the fluid came neither from the uterus nor bladder, but from two small apertures, one on each side of the urethra. Temporary closure of the canals by Pacquelin's cautery caused much pelvic distension, which was relieved when the accumulation of fluid reopened the closed orifices.

Mr. Tait appears to have held to Morrison Watson's theory that these ducts, which he assumed to be Gartner's canals, led into the peritoneal cavity, and nothing further was done, the discharge continuing till the patient was seventy years of age.

If this was a case of patency of both Gartner's ducts from their commencement near the ovary to their ending

near the urethra, a closure anywhere along the vaginal portion of the duct would have led to distension of the broad ligament portion, and a parovarian cyst would have resulted.

The question of treatment may also be alluded to.

If suppuration has occurred, there is probably no doubt that the best plan is to treat the combined cysts as an abscess, by laying open the vaginal part of the duct by means of Pacquelin's cautery knife so far back as the broad ligament cyst, which can then be easily drained and irrigated, and will gradually contract down, and, finally, completely close up. Even where suppuration has not occurred (as in Dr. Milton's or in Mr. Tait's case) the same course might be adopted; the broad ligament parovarian cyst, if present, being washed out with iodine solution, and allowed slowly to contract.

Mr. Milton's method of diverting the course of the duct into the bladder seems to have no advantages; and if there is a vaginal opening, one doubts if an abdominal section as proposed by Mr. Lawson Tait is necessary, or even advisable, for if the parovarian cyst had to be enucleated from its broad ligament investment it might be difficult to effectually close the opening into the vaginal cysts, and unless the vagina were kept aseptic the patient would run great risk of septic abdominal infection occurring.

The conclusions which may be drawn from these cases seem to be as follows:

1st. That Gartner's duct can be traced in some cases in the adult female from the parovarian to the vestibulum vulvæ, ending just beneath and slightly to one side of the urethral orifice.

2nd. Homology tends to show that Max Schüller's glands are diverticula of Gartner's ducts, just as the vesiculæ seminales are diverticula of the vasa deferentia. Some evidence is given that Skene's ducts are not necessarily identical with the anterior termination of Gartner's ducts (as most of those who have traced Gartner's duct to the

vestibule have thought), but that Skene's ducts lead directly and solely from Max Schüller's urethral glands, Gartner's ducts being continued to the vestibule, behind, but parallel to Skene's ducts.

3rd. That Gartner's duct, if patent, may become distended at any part of its course, constituting a variety of parovarian cyst if the distension be in the broad ligament portion, and a vaginal cyst if the distension be in the vaginal portion. The cases described are instances of the association of both of these cysts, owing to simultaneous patency and distension of both portions of the duct.

4th. Attention is drawn to these cases as affording explanations of some obscure cases of profuse watery discharge from the vagina, not coming from the uterus or bladder.

5th. The question of treatment is also approached, and the opinion is expressed that where the whole duct is distended the vaginal part of the cyst may be laid open as far as the base of the broad ligament, and the broad ligament portion encouraged to contract and close up.

Table of Homologous Parts.

Female.	*Male.*
Ovary.	Testis.
Parovarium.	Epididymis.
Gartner's canal.	Vas deferens.
Duct from Gartner's canal to Max Schüller's gland.	Junction of vas deferens with vesicula seminalis.
Max Schüller's gland.	Vesicula seminalis.
Skene's ducts.	Ejaculatory ducts.
Urethra.	Upper part of prostatic portion of urethra.
Urethral orifice and vestibule.	Lower part of prostatic and membranous portion of urethra.
Clitoris.	Glans penis and spongy portion of urethra.

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5. *Doran.* Tumours of Ovary, Fallopian Tube, and Broad Ligament.

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16. *Sutton* (Bland). 'Journ. of Anat. and Phys.,' vol. xx, April, 1886.

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18. *Veit's* case. Handbuch der sp. Path. u. Therapeut., 1877. 'Zeitschr. f. Geburtsh. u. Gynäk.,' Stuttgart, 1882, vol. viii, p. 471.

19. *Watson* (Morrison). 'Journ. of Anat. and Phys.,' vol. xiv.

20. *Watts.* 'Amer. Journ. of Obst.,' 1881, vol. xiv, p. 848.

21. *Winckel.* Dis. of Women, 1887, p. 146.

The PRESIDENT expressed the thanks of the Society to Dr. Routh for his able and instructive paper, which contained both exact and careful original observations, and laborious research into the preceding work of others upon the difficult subject discussed.

Mr. ALBAN DORAN thought that the association of parovarian cysts with cysts in the lower part of the genito-urinary tract in the same subject was strong evidence of their common origin. The rarity of cysts in the lower part was the chief argument against the theory that the duct ever extended so low downwards, but such an argument was in no sense a proof. The development and embryology of the female organs should be studied in a scientific spirit, and the observer must not look out for ducts which he wanted to find, else he was sure to find them, according to his own opinion. Unfortunately, the next man who worked at the subject was apt to deny that any duct had been discovered. At present they must dwell on what had actually been detected. Fischel ("Beiträge zur pathologischen Histologie der weiblichen Genitalien," 'Archiv f. Gynäk.,' vol. xxiv, 1884, p. 119), in dissecting the uterus of a human fœtus, found that Gartner's duct ran into the uterine wall and suddenly turned upwards in the tissues of the vaginal portion of the cervix, ending in a blind extremity, without reaching the vagina. However, this condition might be an individual anomaly; nor did it follow that the blind extremity was the end of Gartner's duct, which might have extended further and become obliterated. Mr. Sutton's theory concerning the homologies of Skene's tubes and Max Schüller's glands was not unreasonable. The tubes were no doubt ducts of glands, yet they might also be the extremities of Gartner's ducts. Even if the ducts could be traced running outside the urethra and ending in blind extremities in the vestibule, that would not prove that Skene's tubes were not the true extremities of Gartner's ducts after all. The cutting off and dislocation of portions of fœtal structures was a common phenomenon in embryology. The clinical importance of Dr. Amand Routh's communication was evident. Just as parovarian cysts tended to burrow, sometimes inconveniently, between the layers of the broad ligament, so vaginal cysts tended to burrow upwards, so as to lie in close association with the parametrium, peritoneum, and large blood-vessels. On the other hand, cysts of Cowper's glands could not burrow in the same direction, owing to the disposition of the pelvic fascia. Hence, whilst the extirpation of large cysts of Cowper's glands was usually practicable and advisable, the dissecting out of large vaginal cysts was dangerous and unjustifiable.

Dr. HERBERT SPENCER said that the paper was a highly important contribution to our knowledge of Gartner's duct. One point he did not agree with, namely, the representation in

the diagram of the middle part of Gartner's duct as running in the fold of the broad ligament, whereas it had often been traced into the outer wall of the uterus, and he (Dr. Spencer) had a specimen of a fœtal uterus showing distension of the duct in that situation. He drew attention to the frequency with which a duct, more or less rudimentary, was to be found opening on either side of the urethra. He noticed that the cyst in Dr. Routh's case had a smooth lining, a point worth noting in view of the frequency with which cysts arising from parovarial tubes developed papilloma. While agreeing with what Mr. Bland Sutton had said as to changes in the epithelial lining of cysts, he (Dr. Spencer) thought that the racemose arrangement and many-layered lining of Skene's glands was so different from the single layer of Gartner's duct that it was evidence of a difference in origin.

Dr. Oliver did not consider vaginal cysts were so rare as was usually supposed. During the last twelve months he had had six cases, and out of this number he was of opinion that two had originated in Gartner's duct. Both had occurred in married women, and were located rather on the right side of the vagina, although they involved very extensively the anterior wall of the vagina too. They extended from the vaginal roof to close upon the remains of the hymen. One cyst contained three ounces of fluid and the other six. In both cases the contents were similar to those found in parovarian cysts. The fluid was slightly opalescent; it was neutral in reaction, and contained albumen and chlorides. The sp. gr. of the fluid was in one case 1005, and in the other 1008. Dr. Oliver stated that the contents of vaginal cysts varied. Recently he had opened one on the posterior wall of the vagina in which the fluid was treacly, in consequence, no doubt, of the presence of blood, but he had long been disposed to believe that some vaginal cysts originated in Gartner's duct.

Dr. Amand Routh thanked the Society for their reception of the paper, and especially those members who had taken part in the interesting discussion. He was glad to find that such able comparative anatomists as Mr. Doran and Mr. Bland Sutton were, in the main, in agreement with him in regard to the conclusions at which he had arrived. He thanked Mr. Doran for his remarks on the diagram exhibited, which clearly was not intended to be anatomically correct, as Dr. Griffith suggested, but purely diagrammatical. It was impossible to draw several planes of tissue except in this way. In reply to Mr. Bland Sutton he said the duct laid open could not be a distended ureter, as it would not then have granulated up after incision. His specimen of vaginal cyst from a distended Gartner's duct in a cow was of great value, as showing unequivocally that such distension cysts do actually occur as suggested. The suggestions

in the paper were not yet capable of actual proof, for no anatomical evidence of a communication between Gartner's duct and Max Schüller's gland had been shown to exist. Homology, however, made this very probable. He did not agree with Mr. Bland Sutton's interpretation of Realdus Columbus's case (1559), and believed that it was not a description of an hermaphrodite, but of a woman with persistent Gartner's ducts, all other organs being, so far as could be judged by the text, normal. He had in the diagram drawn the middle part of Gartner's duct as passing downwards outside the uterine muscle, as it appeared to him to obtain in his own case. He was aware, as stated by Dr. Herbert Spencer, that Fischel and others described it as passing through the cervix to reach the vagina, but others had held the view as drawn in the diagram, and the point was as yet undecided. Embryologically there was no reason to suppose that the Wolffian duct was enveloped by the Müllerian duct in the female except in a few cases, which might, he thought, be viewed as exceptional. He did not find the lining of the cyst anywhere papillomatous, its surface being uniformly smooth. The general idea of his diagram was founded on the basis of one published by Skene. He thanked Dr. Oliver for his remarks on vaginal cysts, in the main confirmatory of his contention.

MAY 2ND, 1894.

G. ERNEST HERMAN, M.B., President, in the Chair.

Present—44 Fellows and 2 visitors.

The following resolution of the Council was put by the President from the Chair, and was carried unanimously :— "That the Obstetrical Society of London congratulates the Berlin Society for Midwivery and Gynæcology on its Jubilee, expresses its high appreciation of the scientific work of that Society in the past, and wishes for it continued and increased activity and prosperity in the future."

Books were presented by the President, Dr. Garrigues, and the Royal Medical and Chirurgical Society.

Thomas Henry Barnes, M.D.St.And.; Frank A. Wagstaff, L.R.C.P.Lond. (Leighton Buzzard); and William Alfred Ward, L.R.C.P.Lond., were admitted Fellows of the Society.

The following gentlemen were elected Fellows :— Reginald Thomas H. Bodilly, L.R.C.P.Lond. (South Woodford; Andrew Bradford, M.D., C.M.Toronto (Lanark, Ontario); and Charles Ernest Goddard, L.R.C.P.Lond. (Wembley).

The following gentleman was proposed for election :— Thomas Vincent Dickinson, M.D.Lond.

A CASE OF EXOMPHALIC FŒTUS.

By Arthur E. Giles, M.D., and R. J. Probyn-Williams, M.D.

This child was born at the General Lying-in Hospital, Lambeth, on the 17th of March, 1894. The mother, aged 27, secundipara, believed the period of pregnancy to be seven months. The head midwife, Mrs. Messenger, attended the case in Dr. Williams' absence. She states that she was at first much puzzled to make out the presentation: it was a breech, but the mass of viscera could be felt, and she thought she had to do with a dead and decomposed fœtus. The membranes had ruptured before admission. Labour proceeded without difficulty. The child made two or three gasps on being born. The placenta was expelled immediately, the cord being very short.

The child appears to be of the male sex, but the malformation of the genital organs renders this doubtful. It is thirteen inches long, and weighs three pounds.

The head and upper extremities are apparently normal. The right foot is in a condition of marked talipes varus; the left shows a slight talipes valgus. The anus is imperforate, and there is a spina bifida, the fluid swelling being about the size of a pigeon's egg. The gap in the vertebræ can be felt.

The trunk is contracted on the left side, causing the pelvis to tilt upwards on that side. The thorax appears normal externally. A mass the size of an orange, and containing viscera, projects from the abdomen. Its pedicle is six and a half inches in circumference at its base, and consists of skin for about half an inch all round except inferiorly. This skin is continued into the amnion, which forms a covering for the mass, leaving exposed, however, on the under surface of the tumour, an area one and

a half inches in diameter. This area presents a corrugated appearance, and seems to have been in direct contact with the chorion.

The cord, about seven inches in length, and straight, starts from the inferior margin of the exposed area, and coursing along its left side, reaches the front of the mass, to which it is closely bound down; it then runs more freely to the placenta, receiving a partial investment from the amnion, which forms a membranous fringe on each side of it.

Just below the visceral protrusion is a small fold, which appears to be the penis; further down are two other folds of unequal size, which seem to be the separated halves of the scrotum.

The specimen illustrates well the ætiology of this condition, which appears to be a form of arrested development. During the first few weeks of fœtal life, as His has shown, the fœtus is anchored at its posterior extremity to the chorion by the allantois; the amnion grows out from the cephalic end of the fœtus, and extends backwards over the dorsal surface. If the primitive attachment remain short, the amnion is unable to form a complete covering for the fœtus; and the cord, instead of coming to lie freely with a complete investiture of amnion, runs along the uterine wall between the chorion and the amnion. The visceral surface of the abdomen of the fœtus thus remains bound down to the side of the uterus, lying on the chorion; the skin is unable to close over the viscera, and exomphalos results. A secondary effect is that the fœtus necessarily assumes a position of dorsiflexion, with lateral flexion superadded if the anchorage of the fœtus is, as is generally the case, on one side of the middle line. Probably owing to the tension on the sides of the trunk, the spinal laminæ are unable to unite, and spina bifida results. Similarly, owing to traction on the intestine, the hind gut is unable to reach the surface, and the anus remains imperforate.

These points are all illustrated in this specimen, and

from the attitude of the fœtus its position in the uterus can be clearly deduced.

For a clear exposition of the ætiology of the condition we refer the reader to Dr. Dakin's paper on "A Dissection of a Fœtus the Subject of Retroflexion," &c., in vol. xxxii of this Society's Transactions (1890), p. 200.

Dr. Amand Routh reminded Dr. Giles that he had shown a very similar specimen ('Transactions,' vol. xxxv, pp. 102—106). In common with the specimen now shown it had extroverted abdominal viscera, spina bifida, torsion and flexion of spinal column, imperforate anus, talipes, and the characteristic skin tag to the right of the rudimentary genitals. He hoped the specimen would be dissected.

KIDNEYS FROM A CASE OF ECLAMPSIA.

By Lennard Cutler.

Mrs. C. H—, aged 23, primipara, was admitted into the General Lying-in Hospital on March 13th, 1894, at 10.45 a.m. Early in pregnancy she had severe vomiting confining her to bed; she was otherwise well until March 12th, when she complained of headache, and did not care for food. At 6.30 p.m. on that day she had a fit, becoming unconscious with twitchings of the hands and arms, biting the tongue and turning the head towards the left. This fit lasted two minutes. She had a second one at 8 p.m., and another at 3 a.m. on the 13th, when the convulsions became more frequent.

On admission.—The patient was unconscious, rather anæmic, with œdema of the face and legs. The pupils were dilated and insensitive. The head turned towards the right, and the mouth was firmly closed. She was eight months pregnant. The urine was acid, straw colour, cloudy, solid with albumen, containing urea 1·2 per cent.

and many granular casts. Chloroform was administered, and she was delivered by forceps ten minutes after admission.

After delivery the pulse became very weak, and the patient rather cyanosed, with pin-point pupils. Ether was injected into the chest wall and the mouth forced open. The breathing soon became better, and the pulse improved, 124; respirations 20.

March 13th, 5 p.m.—After losing the effect of the chloroform the patient began to yawn frequently. The masseter muscles on each side acted alternately. The eyes were rolled and the head moved towards the right. The patient remained unconscious; said "Oh dear" several times. She seemed thirsty, and drank half a pint of milk and some water. One minim of croton oil was given with results. Pulse improved, 120; resp. 26; temp. 97·2°.

14th.—There has been no fit since delivery; there is chemosis in both eyes, but the swelling is going down in the legs and face. The patient is still drowsy and unconscious; the pupils small. When asked if thirsty, she said "Yes." Takes liquid well, ʒj of whisky and ʒij of milk with ʒij of water every hour.

Very little urine has been drawn off by catheter, and fomentations are being applied to the loins. The patient was more restless at night-time. Injectio Morphinæ hypod. gr. ¼ given at midnight.

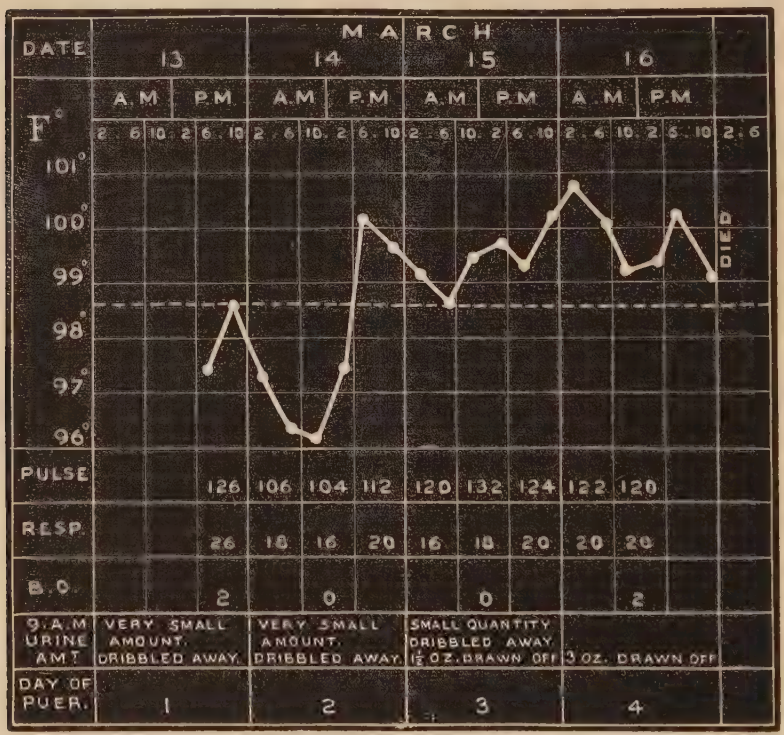
Urine acid, amber colour, cloudy, albumen two-thirds, 1 per cent. urea, urates. Temp. 96·2°, pulse 106, resp. 18.

15th.—Patient seems better this morning. Swelling of face and legs less, and chemosis has disappeared. Perspiring all night. Has had no fit; is still drowsy, but seems more conscious; takes liquids well. Little urine is being excreted, but some was passed involuntarily on to a pad. An attempt to examine for retinitis was unsatisfactory, as the patient was so restless. Temp. 100·2° last night, this morning 98·6°; pulse 120; resp. 26.

Evening.—The bowels were not opened. Pulv. Jalapæ Co. ʒj was ordered every four hours until they acted; 1½ ounces of urine was drawn off, which was alkaline,

cloudy, one-fourth albumen, and contained urea 1 per cent., no casts.

16th.—Three drachms of jalap powder and a common enema had no result. One minim of croton oil was given. The patient was more drowsy in the morning; could not be



Date.	Urine.			
	Colour and reaction.	Sp. gr. deposit.	Albumen.	Urea.
Mar. 13	Straw; acid	Many granular casts	Solid	1·2 per cent.
„ 14	Amber; acid	Urates	Two thirds	1 per cent.
„ 15	Cloudy; alkaline	Phosphates	One quarter	„
„ 16	„	„	„	·6 per cent.

roused at all. Pupils reacted sluggishly to light, and were dilated. There was no œdema of the face, slight of legs. Temperature last night 100·6°, this morning 99·2°; respirations 20; pulse more tense, 120, regular. Moist sounds heard over lungs. No signs of consolidation. Patient is not sweating so profusely, but the skin is moist. The tongue is dry and coated. No twitching or sign of convulsion. There is now difficulty in getting the patient to take nourishment; does not seem able to swallow. 12.15 p.m., Injectio Pilocarpin. hypoderm. gr. $\frac{1}{6}$. Patient began to perspire freely five minutes afterwards. 5 p.m., seems better, takes notice when spoken to, and opens her eyes. Uttered some intelligible sounds. Pulse less tense, 120; resp. 20. Breathing quietly. Takes food more readily. Three ounces of urine were drawn off this morning, none since; alkaline, dirty straw colour, cloudy, one-fourth albumen, urea two-thirds per cent. 11 p.m., patient apparently sleeping naturally. Temp. 100·2°; resp. 20. Breathing quietly. Has taken plenty of fluid nourishment. A small quantity of urine has dribbled away on the pad.

17th, 2 a.m.—The nurse reports that the patient suddenly began to breathe with difficulty, became ghastly pale, and died in less than ten minutes.

Post-mortem appearances.—Body well nourished, anæmic. No œdema about the face, slight of the legs and lower part of back. About half a pint of fluid in peritoneal cavity. No œdema of glottis. *Lungs:* base of either lung congested and œdematous; float readily in water; much blood-stained mucus squeezes out. *Heart:* normal. About two ounces of serum in pericardial cavity. *Spleen:* congested and breaks down readily, not enlarged. *Kidneys:* right 7 ounces, left 6 ounces; swollen, have somewhat rounded forms. Full of blood. Capsule strips readily. Surface smooth, mottled, and paler than normal. Cortex shows whitish patches, both under capsule and scattered through its substance, varying from size of a small pea to elongated narrow bands. These are clearly marked off from the rest of the cortical tissue, which is of a dark

chocolate colour. What they are does not definitely appear under the microscope. Pyramids well marked, dark red. Bright red spots over the surface; small hæmorrhages.

Microscopically there is intense congestion with hæmorrhage into the tubes, especially under the capsule.

The lymphatics around the glomeruli and tubules are crowded with small cells, which for the most part are confined to their channels, but at one or two spots there are foci of small cells in connection generally with a vessel, which suggest small abscesses.

The vessels show no marked thickening of any of their coats. Most of the glomeruli are intensely congested, some being so much so that the whole of their structure is obscured by red corpuscles. There is no thickening of Bowman's capsule or fibrosis of the tuft.

Epithelium.—The lumen of many tubes is filled with a fibrinous substance. Most tubules, however, show what is apparently a running together of the cells, having no definite structure, and having their nuclei obscured; the whole condition of the epithelium being similar to that often found in acute toxic conditions. The whole of the changes above described are almost wholly confined to the cortex, and are suggestive of a very recent acute interstitial nephritis with secondary affection of the epithelium.

Liver normal, 3 lbs. 6 ounces. Intestines normal. Uterus contains a small amount of clot, measured 6 inches from cervix to fundus. Brain: meninges healthy. Brain substance normal to naked eye. Ventricles normal. Microscopically healthy.

I am much indebted to Dr. W. J. Fenton for the preparation of the microscopical specimens.

The PRESIDENT said there were three points in Mr. Cutler's case worthy of attention. First, the condition of the kidneys. It had been suggested, and the view had found favour with the late Dr. Matthews Duncan, that in some cases at least of puerperal eclampsia the disease was not ordinary nephritis, but an acute atrophy of the kidney, pathologically allied to acute atrophy of the liver, and, like that disease, especially apt to attack pregnant women. Cases of such acute atrophy of the kidney had been described by Hecker and by Angus Macdonald.

He (the President) had put on record a case in which the kidneys had been submitted to Dr. Charlwood Turner, a pathological expert unbiassed by any preconceived theories as to the nature of the disease causing eclampsia in pregnancy; and Dr. Turner's report ('Trans.,' vol. xxxiii, p. 338) was that the kidneys showed "changes attributable to some toxic matter in the blood." Mr. Cutler had read to them the report of a pathologist upon the kidneys now exhibited, and that report was that the changes produced were like those of blood-poisoning rather than of inflammation. These cases tended to show that the extremely acute disease which produced eclampsia in pregnancy was an acute change in the kidneys peculiar to pregnancy, and not ordinary nephritis. The second point was as to the temperature. Since the publication by Bourneville of some cases ending fatally by rapidly rising temperature, it had been taught in text-books that the temperature was a valuable sign in prognosis; that a rising temperature indicated danger, while if the temperature did not rise high, recovery was probable. He (the President) was satisfied that death with a rapidly rising temperature was only one mode of death from puerperal eclampsia. He had published a fatal case ('Trans.,' vol. xxxii, p. 43) in which the temperature was subnormal throughout. In Mr. Cutler's case the temperature was never much raised. A very high temperature might indicate danger, but a low temperature did not show that prognosis was favourable. Third, as to the quantity of urine and urea. He (the President) had reported to the Society a number of cases of Bright's disease in pregnancy, and of eclampsia, which, taken together, showed that in the cases that got well, delivery or cessation of fits was followed by increased diuresis and augmentation of the quantity of urea excreted, while in those that did not recover there was no increase in the urea excretion after delivery or cessation of fits. He regarded this as the surest guide in prognosis. Mr. Cutler's case confirmed this view, for after delivery the quantity of urine and the percentage of urea contained in it steadily declined.

GANGRENOUS UTERINE FIBROID REMOVED BY ABDOMINAL HYSTERECTOMY.

By William Duncan, M.D.

Dr. Duncan gave the notes of this case. The patient, aged 36, was admitted to the Middlesex Hospital on April 4th, 1894, very ill, and with a gangrenous mass pro-

truding from the vulva. She had been married ten years, had eight children (youngest three years old), no miscarriages.

She had always been regular every three weeks, her periods lasting only two days, until two years ago, when they began to appear every two weeks, and to last seven days.

Since December, 1893 (five months), the loss had been almost continuous, and on March 31st it became very offensive.

On examination the uterus was felt rising above the pelvic brim. *Per vaginam* the cervix was dilated and patulous; projecting through the cervical canal and filling the vagina was a black stinking mass. The patient was very ill, with a temperature of 102·5° and pulse 142. Next day she was anæsthetised, and the sloughing mass removed with forceps. On introducing the finger into the uterine cavity a gangrenous fibroid, about the size of an orange, was found situated a little above the internal os uteri and to the right side. No distinct line of demarcation could be felt between the tumour and the uterine wall; and as in one part there seemed to be very little tissue separating the finger in the uterus from the peritoneal cavity, it was decided not to attempt enucleation. The uterus was irrigated with a mercuric chloride solution, and an iodoform bougie passed into the cavity.

On April 12th, as the patient seemed to be losing ground, Dr. Duncan decided to perform abdominal hysterectomy. An incision four inches long was made in the middle line of the abdomen, and the uterus with its appendages drawn out; the broad ligaments were transfixed on either side, and the tubes and ovaries removed. Next a Kœberlé's serre-nœud was passed round the lower part of the cervix and tightened up; then all round the clamp was packed with cotton wool soaked in mercuric chloride solution. The uterus was now cut across, when its cavity was opened a lot of horribly offensive matter escaped and soaked into the plugs. The parietal peritoneum was carefully united to the peritoneum all round the cervix just below the

serre-nœud, and then the abdominal wound was closed and dressed in the ordinary way.

The patient made an excellent and uninterrupted recovery ; the clamp came away on the twelfth day, and now (May 2nd) there is only a small granulating wound left. The patient's temperature is normal, and she is gaining flesh and strength.

Remarks.—Dr. Duncan said the case presented several points of interest ; the first was as to the best method of treating a gangrenous fibroid. It was evident on examination that any attempt to enucleate the tumour would lead to perforation of the uterus into the peritoneum, and certain death result. The choice lay between doing all that was possible in the way of irrigating the uterus with antiseptics whilst waiting for nature to throw off the sloughing mass, and removing the uterus. Dr. Duncan thought that, notwithstanding the grave condition the patient was in from septicæmia, removal of the uterus afforded her the best chance.

Then came the question, should it be removed by the vagina or by the abdomen ? Removing it by the vagina had the advantage of complete removal, with perhaps a somewhat slighter risk. On the other hand, by performing abdominal hysterectomy the tubes, which were not unlikely to be diseased also, could be removed at the same time, and also there was some risk in tearing the diseased uterus whilst doing vaginal hysterectomy, and thus setting up fatal peritonitis.

The specimen handed round showed that there was only an extremely thin layer of uterine tissue between the tumour and the peritoneum, so that any attempt at enucleation must have caused perforation. The Fallopian tubes were apparently healthy, but the left ovary was dilated into a cyst the size of an unshelled walnut.

Dr. Duncan said that the condition of gangrenous or phagedænic fibroids was an extremely interesting one, and he was unaware that any good explanation of its cause had ever been put forward.

Dr. Peter Horrocks asked if microscopic examination had been made, because the cut surface of the tumour was flat like the section of a raw potato, which was characteristic of malignant growths, and not convex as occurred when a fibroid was cut across. Moreover he noticed the patient had had many children, which was against the view of fibroid. He could not obtain any milky juice on scraping the surface, but he should not be surprised if on histological examination it proved to be of a malignant character.

Dr. Dakin asked why Dr. Duncan had preferred abdominal to vaginal hysterectomy, since by the latter method the ovaries and tubes, which Dr. Duncan thought it advisable to remove with the uterus in this case, could be quite completely extirpated. There would also have been no danger of infecting the peritoneum by the virulently septic secretion necessarily escaping from the uterine cavity opened in the abdominal operation, for the uterus could be removed *per vaginam* without any contamination of peritoneum by the cervix. In addition, although ventral hernia might not be very commonly observed after abdominal sections, there was little doubt that it was more frequent than was suspected by operators. It was certainly more frequent after hysterectomy than after most other abdominal sections. As far as Dr. Dakin's experience went there were no unpleasant results following successful rapid extirpation of the uterus.

Dr. Duncan, in reply, said he had not yet examined the tumour microscopically, but sections were being prepared, and, when ready, would be shown to the Society. He preferred abdominal to vaginal hysterectomy in this case because he feared the uterus, being so thin, might tear during the latter operation, and thus its offensive contents get into the peritoneal cavity; besides which, in many cases of vaginal hysterectomy, the tubes and ovaries could not be removed as completely as by the abdominal operation. He quite agreed with Dr. Dakin as to the occurrence of ventral hernia sometimes after supra-vaginal hysterectomy, but also intestinal obstruction had been known to occur from adhesion of bowel to the wound left after vaginal hysterectomy.

TWO CIRRHOTIC AND CYSTIC OVARIES, WITH MICROSCOPICAL SECTION OF SAME.

By Leonard Remfry, M.D.

OVARIAN TUMOUR WITH GREATLY ENLARGED FALLOPIAN TUBE.

By Peter Horrocks, M.D.

DILATED FALLOPIAN TUBE AND OVARY.

By T. C. Hayes, M.D.

A Committee, consisting of Drs. Gow, Tate, and Hayes, was appointed to report on this specimen.

Report of Committee on Mr. Grogono's specimen of Fœtus Acephalus Acardiacus. Shown February 7th, 1894 (*p.* 65).

We, the undersigned, have met this day, and, after examining the specimen named above, have drawn up and signed the following report.

The specimen is six inches long and four inches in its greatest width.

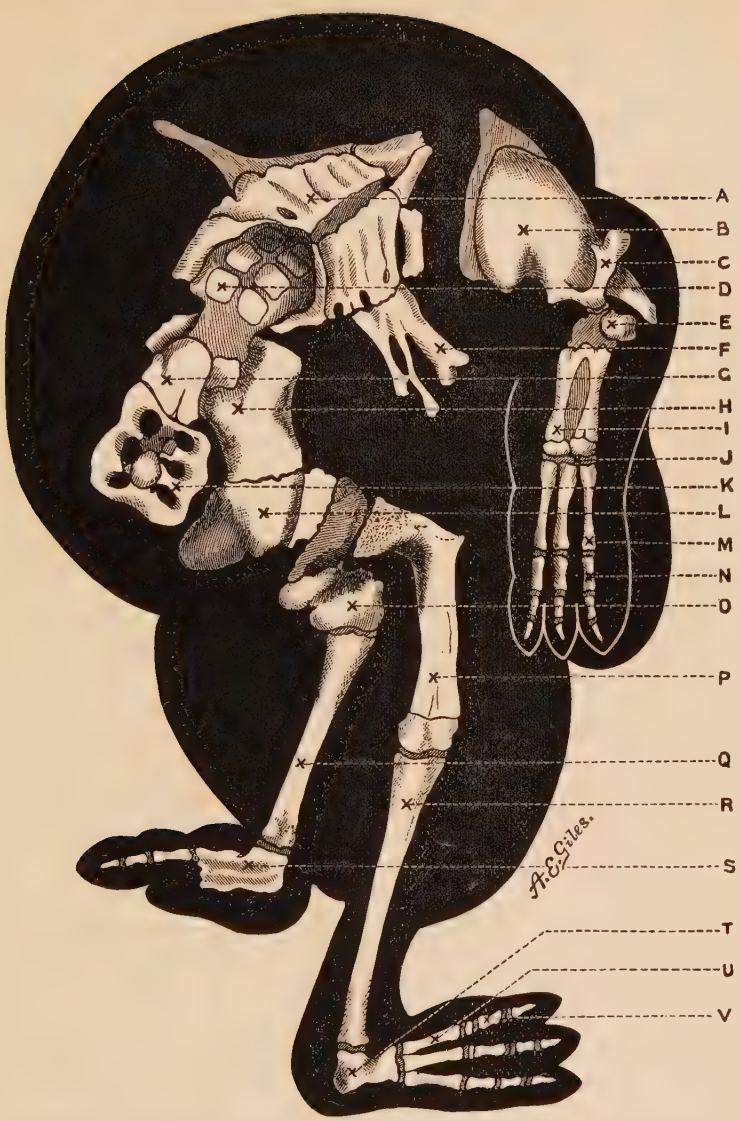
It is divided by a marked constriction into two parts, an upper larger and a lower smaller. The upper part bears a misshapen right hand with three fingers, attached to a shoulder. There is no trace of a left upper extremity. The shoulder is firm; almost all the rest of this portion feels soft and doughy. On its upper anterior aspect is a patch covered by black hair; at the lower border of the hairy portion is a hemispherical protuberance, softer and pinker than the surrounding skin. Below this is a sac, on the surface of which the umbilical cord spreads out, and which is soft and thin-walled above, hard below. It contains viscera.

The lower and smaller part of the fœtus is firm, and bears two deformed feet, one of which has three toes and the other one. The toes, like the fingers, have nails. The feet are planted close together on the anterior aspect of this portion of the fœtus. Neither in the cleft between the feet, nor anywhere else, can any trace of anus or of genital organs be found.

Dissection.—In the visceral mass is a piece of intestine, terminating at one end blindly, and at the other in a mass of friable yellowish tissue. Two oval masses appear to be kidneys, but the specimen is too decomposed to allow of microscopic examination. Several vessels are also present, but nothing can be gathered from their distribution.

The upper portion of the specimen consists mainly of four dilated and thin-walled cysts containing clear fluid; they do not communicate with one another nor with surrounding structures. Each has a distinct cyst-wall. They are probably products of œdematous degenerative changes.

Skeleton.—Occupying nearly the centre of the specimen is a piece of vertebral column, containing spinal cord. It terminates superiorly in a conical mass of bone, over which is situated the hemispherical protuberance above mentioned; this, when cut into, is found to be a bursa (probably a pressure-bursa). At the other end of the piece of vertebral column the spines are deficient for about an inch, the bodies of the vertebræ being alone present; and beyond this portion again is a rudimentary sacrum. A hatchet-shaped piece of bone adjacent to the sacrum represents an iliac bone, articulated to which is a semi-cartilaginous mass representing the remainder of the pelvis. The femur is present on the right side, and to this is fastened the tibia, articulating below with a tarsus, of which the individual bones cannot be recognised. The foot terminates in three well-developed metatarsal bones, bearing the normal number of phalanges. On the left side the lower end of the femur is present, and the rest of the limb is like the right, except that the three metatarsal bones are fused, and there is only one complete set



SKELETAL SYSTEM OF ACEPHALIC ACARDIAC FŒTUS (Dr. Grogono's specimen). Dissected by Arthur E. Giles.

A. Vertebral mass.
B. Scapula, right.
C. Spine of scapula.
D. Bodies of dorsal vertebræ.
E. Right humerus.
F. Right ribs, fused.
G. Bodies of lumbar vertebræ.
H. Iliac bone.
I. Radius and ulna.
J. Carpus.
K. Sacrum.
L. Ischium and pubes.
M. Metacarpal bones.
N. Phalanges.
O. Left femur.
P. Right femur.
Q. Left tibia.
R. Right tibia.
S. Left tarsus and metatarsus.
T. Right tarsus.
U. Metatarsal bones.
V. Phalanges.

of phalanges; the others are indicated by several small nodules of cartilage. Four rudimentary and partly fused ribs articulate on the right side with the portion of spinal column that is complete. The right scapula is well developed, with spine, acromion, and coracoid process. The clavicle is absent. The humerus, radius, and ulna are represented only by small cartilaginous nodules. The carpus is present, and supports three metacarpal bones with the normal number of phalanges.

We learn that the mother of this monster was a strong healthy primipara, aged twenty-two years. Labour occurred at full term, and the monster was one of twins. The other was a fine healthy female child, and was born naturally; the monster was born next, and then the placenta was expelled. It did not seem to be abnormal, but had two cords, one normal, the other short and atrophied.

The prepared skeleton and a drawing of the same are shown herewith.

Walter Arthur Grogono.
J. Bland Sutton.
Arthur E. Giles.

ON INTERMITTENT CONTRACTIONS OF UTERINE FIBROMATA AND IN PREGNANCY IN RELATION TO DIAGNOSIS.

By J. Braxton Hicks, M.D., F.R.S.,
CONSULTING OBSTETRIC PHYSICIAN TO GUY'S AND ST. MARY'S HOSPITALS.

(Received January 27th, 1894.)

This contribution, having already appeared in the 'Medical Press and Circular' of May 9th, 1894, p. 481, is not published here ("Laws," chap. xvi, sect. 7). The discussion which followed the reading of the paper is published in the report of the May meeting of the Society in the 'Lancet,' vol. i, 1894, pp. 1191–2.

JUNE 6TH, 1894.

G. ERNEST HERMAN, M.B., President, in the Chair.

Present—47 Fellows and 2 visitors.

Books were presented by Mrs. Tilt, Dr. Rocchi, and the American Association of Obstetricians and Gynecologists.

John Henry Chaldecott, L.R.C.P.Lond; Henry W. Gibson, L.R.C.P.Lond.; Charles Ernest Goddard, L.R.C.P.Lond. (Wembly); Evan Jones, L.R.C.P.Lond.; and William L. Livermore, L.R.C.P.Lond., were admitted Fellows of the Society.

Andrew Bradford, M.D., C.M.Toronto (Lanark, Ontario); and William C. Loos, L.R.C.P.Lond. (Waltham Cross), were declared admitted.

The following gentleman was elected a Fellow of the Society:—Thomas Vincent Dickinson, M.D.Lond.

The following gentlemen were proposed for election:—Roland D. Brinton, B.A., M.D.Cantab.; David Fairweather, M.D.Edin.; John Arnallt Jones, L.R.C.P.Lond. (Aberavon); Albert William Denis Leahy, M.D.Durh., F.R.C.S.Eng. (Calcutta); Æneas John McDonnell, M.B.Sydney (Queensland), and David Petty, M.B., C.M.Edin.

The death of Dr. Tilt.

The following resolution was put from the Chair and carried unanimously:—"The President, Council, and Fellows of the Obstetrical Society of London thank Mrs. Tilt for her valuable gift of books from her late husband's library, and take this opportunity of offering to Mrs. Tilt and family the expression of their deep sympathy in the great loss they and the profession have sustained in the recent lamented death of their highly distinguished Fellow, Dr. Tilt."

FIBROMA OF THE OVARY.

By James Crawford, M.D.

Dr. Crawford showed a specimen of a fibroma of the ovary from a woman who committed suicide by taking an overdose of opium at the age of forty-nine. It was stated that she married when she was eighteen years of age, had two children (girls) within three years, and that soon after the birth of the last child a very severe hæmorrhage occurred, following an operation on the uterus the nature of which he was unable to ascertain; from this she recovered after a long illness; subsequently, however, and up to the time of her death, she had lived apart from her husband.

At the post-mortem examination a tumour of the left ovary the size of an orange was removed, with its pedicle and some of the surrounding structures; the whole weighing about 6¼ ounces. It was hard, smooth on the surface, irregularly globular in form, covered by peritoneum, and on one side of the tumour was a small patch of mucoid degeneration. On making a section of the tumour it was solid throughout, while the ovary, from the

hilum of which it apparently arose, was spread over the tumour from the attachment of the pedicle. The right ovary and the uterus he also noticed were normal in appearance, the latter bore no evidence of a severe operation; the cavity of the peritoneum was free from fluid; the arteries (large branches) were atheromatous, especially at the base of the brain; the walls of the left ventricle of the heart were hypertrophied, and the other organs were congested but otherwise apparently healthy. Mr. Yearsley, of the Westminster Hospital, kindly made a microscopic examination of the tumour, and reported it to be a pure fibroma.

In the Westminster Hospital catalogue of specimens of morbid anatomy two specimens are described, and it is stated that fibromata of the ovary are rare. One of the tumours, a fibroma-myoma, weighed 13 pounds; the other, a small specimen, was a true fibroma.

Mr. Doran, in an abstract published in the 'Obstetrical Transactions,' vol. xxx, 1888, p. 411, says, "fibroma of the ovary is a well-known but rare disease. True fibrous tissue is naturally abundant in the tissue of the hilum (paroöphoron); this fact is enough to account for fibroma of the ovary." He also states that muscular tissue is a constituent of the ovary, but confined to the blood-vessels, and free bundles derived from the ovarian ligament.

Dr. Cullingworth ('Obstetrical Transactions,' vol. xxi, 1879, p. 278), in describing a preparation of fibroma of both ovaries, mentioned that the tumours "replaced the structure of the ovaries, no portion of the normal tissue of the ovaries remaining," and (p. 283) referring to Dr. Goodhart's case* the tumour "was shown to spring from the outer layer of the ovarian stroma," again he says, Leopold has described a tumour in the structure of the right ovary. Mr. Bland Sutton, in his book on 'Tumours, Innocent and Malignant,' says "ovarian fibromata in a few rare instances have been demonstrated in the ovary. They may be regarded as 'pathological curiosities.'"

* 'Trans. Path. Soc. Lond.,' vol. xxv for 1874, p. 199.

FIBROMA (?) OF THE OVARY.

By Peter Horrocks, M.D.

The specimen was removed from a girl 22 years of age. At first the tumour lay in the pelvis, displacing the uterus upwards and forwards. One day it slipped up into the abdominal cavity, the uterus resuming its normal position. The tumour was removed by abdominal section, the patient making a good recovery. It was found to be a growth in the left ovary, somewhat ovoid in shape, and about twelve inches in its longest diameter and about ten inches round the widest part of it. Its surface was smooth and not very vascular-looking. In consistence it was very hard, and when cut across the surfaces did not bulge, but remained flat like a cut raw potato ; only a watery juice could be obtained on scraping. The sections under the microscope show that it is richly cellular, the cells having the characters of embryonic tissue. The intercellular stroma was distinctly white, wavy fibres in some places. From this and the fact that the patient was in good health, he considered it was a fibroma and not a sarcoma, and that it would not recur.

Dr. Horrocks, in reply, said that it was a very difficult matter to distinguish between embryonic tissue, inflammatory products, tubercle, sarcoma, and fibromata, and he might add myomata. He thought the specimen shown was a fibroma, but he would certainly keep the patient under observation and note any recurrence.

LARGE SARCOMA (?) OF THE OVARY.

By Peter Horrocks, M.D.

The specimen was removed from a woman nearly 50 years of age. She had been treated in the Soho Hospital

twelve years ago for "fibroid tumours of the womb;" this was her own statement. She came under the care of Dr. Bull, of Chislehurst, who was present at the operation, which was performed because the tumour was growing steadily larger, and the patient was in pain and was losing flesh. It was found to be a growth of the ovary, and the adhesions to the small intestines and the pelvis were very vascular and very formidable.

The tumour was solid throughout, but softened in places. It measured thirty inches in circumference, and was more or less spherical. The cut surfaces remained flat, and yielded a not altogether clear juice. There had not been time to prepare good sections, and the one under the microscope, cut from a frozen piece of the growth, was not very satisfactory.

Note.—The patient left the hospital three weeks after operation.

LARGE FIBROID TUMOUR OF THE UTERUS.

By Peter Horrocks, M.D.

This specimen was shown in order to compare with the two preceding specimens. It was a uterine tumour, and it had been removed by abdominal section a few days previously. It grew apparently from the right cornu of the uterus, and the pedicle was about as thick as the wrist. A serre-nœud was put round it and the stump was drawn to the lower angle of the wound. The patient was progressing favorably. The tumour is seen to be smoother on its surface than the other specimens, and on section the cut surfaces bulge so as to become convex, showing elasticity and contractility so characteristic of fibromyomata. The scrapings were watery.

UTERUS WITH PLACENTA PRÆVIA MARGINALIS IN SITU.

By G. F. Blacker, M.D.

Dr. Blacker showed a specimen of a uterus with a placenta prævia marginalis *in situ*. The specimen was obtained from the body of a woman who died in the eighth month of pregnancy from a cerebral tumour.

The patient was aged 35 years, had had several miscarriages and no living children; unfortunately no history could be obtained of the number of the miscarriages, nor as to the periods of gestation at which they occurred.

The specimen consisted of the uterus, placenta, membranes, and cord. The uterus had been laid open anteriorly, and measured 9 inches vertically from internal os to fundus. No difference in thickness between the upper and lower segments of the uterus was apparent on inspection. On taking measurements, the fundus was found to measure $\frac{1}{4}$ inch in thickness. The anterior wall three inches below the fundus $\frac{3}{16}$ inch thick, six inches below the fundus $\frac{1}{4}$ inch thick, nine inches below the fundus $\frac{3}{16}$ inch thick; the posterior wall one inch above the upper border of the placenta $\frac{1}{4}$ inch, and with the placenta at the thickest part $\frac{3}{4}$ inch. The cavity of the cervix, measuring $1\frac{1}{2}$ inches, was apparently quite distinctly marked off from that of the body, and was filled in the recent state with blood-stained mucus. The mucous membrane of the cervix presented the ridges of the arbor vitæ well marked, and the mouths of numerous glands opening not only into the cervical canal, but also upon the vaginal aspect of the cervix. The placenta was attached to the posterior and left walls of the uterus, two thirds of it being to the left of the middle line. The lower margin reached accurately to the level of the internal os, but in the recent state no part of it actually overlapped the internal os. It

measured 7 inches by $5\frac{3}{4}$ inches across at its widest part, and the cord, 16 inches in length, was inserted into the placenta $1\frac{1}{4}$ inches from the left margin, exactly midway between the upper and lower borders. The placenta was very easily separated from the lower segment of the uterus after death, and no difference could be detected in the ease with which the membranes stripped off the upper and the lower segment respectively. The right ovary was converted into a small cyst, the left contained a corpus luteum measuring $\frac{1}{2}$ by $\frac{3}{8}$ inch in diameter. The child, a female, lay in the second vertex position; the cord passed from the placenta under and then round the child's neck to the umbilicus. The patient had a slight discharge of blood from the vagina shortly before her death.

The PRESIDENT said the Society was indebted to Dr. Blacker for exhibiting this instructive specimen, and for his detailed and exact description of it. He (the President) thought that the important point to investigate, in specimens of placenta prævia, was the condition of the decidua. The old mechanical theory of the production of placenta prævia was unsatisfactory. Much had been published to show a connection between placenta prævia and disease of the endometrium; but we knew little definite about it. He hoped Dr. Blacker would examine the decidua in this case, and report upon it to the Society.

ON AN EARLY TUBAL OVUM.

By J. BLAND SUTTON.

OUR knowledge of the ovuline membranes in the case of the tubal ovum is very defective; this is due to the fact that nearly all the examples obtained by surgical operations are in the condition of moles. The specimen which forms the subject of this communication is natural. It was obtained in the following circumstances.

Dr. Louis Beer asked me to see Madame M—, who, he had reason to believe, was suffering from profuse internal hæmorrhage due to rupture of a gravid tube.

On seeing the patient there was no reason to question the diagnosis. She was thirty-five years old, mother of one child, and had not been pregnant or missed a period for fifteen years until April, 1894. Fourteen days after this period was due the patient complained of pain in the pelvis. April 27th, she was ill, and sought medical advice; April 28th, she was confined to her bed; April 29th, about four o'clock in the afternoon, she experienced severe pelvic pain and passed into a state of alarming collapse. At the time of my visit (a few hours after the onset of these alarming signs) the woman was blanched; pulse scarcely perceptible at the wrist; voice reduced to a faint whisper; dulness in each iliac fossa; recto-vaginal fossa distended; movement of uterus caused pain; cervix soft and slightly patulous.

The diagnosis of primary intra-peritoneal rupture of a gravid tube was obvious enough. Abdominal section was carried out two hours later. A large quantity of blood escaped as the peritoneum was incised; an ovum was detected still lying in the right Fallopian tube, which had burst. The tube, ovary, and adjacent portion of the mesosalpinx were removed after the usual method. A large quantity of blood and clot was removed by free irrigation with warm water. The incision was sutured in the usual manner.

The patient rallied fairly well, but she unfortunately died sixty hours later.

The ovum is represented of natural size in Fig. 1; the embryo is lodged in an amnion as usual. The chorion is beset with villi, which are especially developed at one pole of the ovum, where they receive the allantoic vessels. A careful examination of the ovum also shows that a space exists between the allantois and chorion. To this space I wish for a few moments to ask attention. In the early ovum there is a relatively large space between the amnion

and the chorion; this space, filled with albuminous fluid, has not, so far as I know, received a specific name from

FIG. 1.—The tubal ovum from Madame M—, showing the space between chorion and amnion, and the polar disposition of the chorionic villi. (Nat. size.)

embryologists. It will serve our purpose to-night at all events to speak of it as the subchorionic space (Fig. 2).

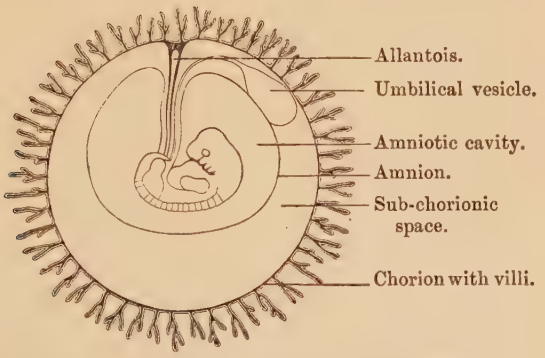


FIG. 2.—Diagram of an early ovum, to show the arrangement of the membranes.

As the embryo increases in size the amnion encroaching on this space gradually obliterates it, but for many weeks a potential space exists between the amnion and chorion,

like that between pulmonary and visceral pleuræ. This space was clearly demonstrable in the ovum the subject of this communication.

These facts throw some light on the constitution of the tubal mole. An examination of a typical mole (Fig. 3)

FIG. 3.—A tubal mole. (Nat. size.)

shows that the blood is limited by two membranes, of which the inner one is the amnion and the outer the chorion. *It is therefore obvious that the blood occupies the subchorionic space.* This at once explains the elliptical shape of many moles, for if the effusion of blood happens at the time this space is large, the amnion will be squeezed to one pole of the ovum.

A very important question arises out of this observation. Many are content to believe that a mole is formed by an irruption of maternal blood into the ovuline membranes. In the face of the observed facts mentioned above, this loose opinion must "go to the ground." *The blood is doubtless furnished by the ovuline vessels;* it therefore follows as a corollary that *tubal moles are produced by causes acting within the ovum.* Again, in some cases a mole is found *in situ* but no blood is found extravasated into the lumen of the tube. In such specimens it is clear that the blood must come from some source within the ovum.

The local development of the chorionic villi and their relation to many grave changes which occur in gravid tubes might with great advantage be discussed in con-

nection with this interesting ovum. I refrain, however, because I do not wish to obscure the chief point of my communication, which is briefly this:

A tubal mole is formed by blood extravasated from the ovuline vessels into the subchorionic chamber.

I venture to offer these observations to the Society as a contribution to those studies so exquisitely and eloquently indited by Sir William Priestley in his lectures on the "Pathology of Intra-uterine Death."

Dr. Peter Horrocks asked if Mr. Bland Sutton had examined the blood microscopically, because if it were of fœtal origin it ought to exhibit characters different from those of the maternal blood. In an embryo so young the blood-cells were recently mesoblastic, and had distinguishing features. He had always taught that an ovum might perish from hæmorrhage from the chorionic villi (fœtal), or from maternal sinuses (maternal), or from both, and he thought most would agree to this. If the space which Mr. Sutton proposed to call "subchorionic" could be easily demonstrated in other specimens, it might be possible to discover the difference between death due to fœtal or to maternal causes. At the same time he thought careful examination of the blood-clot should be made.

The President said that the theory now propounded by Mr. Sutton was so novel and ingenious, and far-reaching in its consequences, that he rather regretted that it had not been put before the Society in the form of a paper, so that they might have had time to consider it before expressing any opinion about it. In all the so-called "carneous moles" formed *in utero* the clots were outside the amnion, and in many the amnion was incompletely in contact with the chorion.

Note.—When this specimen was exhibited to the Society, it was suggested that if the blood in the subchorionic space is furnished from the embryonic circulation the corpuscles ought to exhibit certain peculiarities. Since the paper was read Mr. Bland Sutton has had one opportunity of testing the point, and found that the *red corpuscles were nucleated* and the white cells were especially numerous.

UTERINE FIBROIDS.

By J. D. Malcolm, M.B., C.M.

Mr. Malcolm showed two fibroid tumours removed by abdominal hysterectomy from a patient a week after she had miscarried in the sixth month of pregnancy. The operation was performed because from the third to the sixth day after the miscarriage the temperature steadily rose to 103·8° F., the patient seemed to be rapidly going from bad to worse, there was no reasonable prospect of a change for the better, and the exact condition of the parts, as well as the nature of the tumour or tumours, was uncertain, while the vaginal discharge was odourless and apparently healthy. The uterus was found acutely retroverted with a large fibroid in its anterior wall extending high into the abdomen, and a smaller one in its posterior wall firmly fixed, but not adherent, in Douglas's pouch. On the larger growth being brought out of the abdomen, the posterior one was released, and could also be brought out. Both tumours and the greater part of the uterus were removed. Section of the posterior growth showed an ashen-grey colour, quite different from that of the other, and which seemed to indicate that sloughing was taking place. A chart was exhibited showing an immediate fall of temperature after the operation, and a satisfactory record of the febrile condition during the ten days that had elapsed.

October 1st, 1894.—The patient made a complete recovery.

Dr. Amand Routh stated that when recently removed from the abdomen, the retro-uterine fibroid, which had during the previous days been the main seat of pain, was undoubtedly undergoing very rapid retrogressive changes, being soft and evidently fatty throughout its main bulk, but it also seemed to be on the point of sloughing in two or three places. As this was a rare condition, a microsopical examination would be very valuable. It was this rapid degeneration, and absorption of

effete products, which almost certainly caused the septic temperature, which dropped almost to normal as soon as the tumour was removed.

In reply to the President, Mr. MALCOLM said that the broad ligaments were tightly stretched over the fundus uteri between the tumours, but by tying and dividing them they were allowed to retract, and the tumours could then be drawn forward, so that it was possible to place a wire round the base, including the tied broad ligament.

LIGATURE AND DIVISION OF THE UPPER PART OF BOTH BROAD LIGAMENTS, AND THE RESULT AS COMPARED WITH THAT FOLLOWING REMOVAL OF THE UTERINE APPENDAGES.

By Leonard Remfry, M.A., M.D., B.C.Cantab.,

ASSISTANT OBSTETRIC PHYSICIAN, ST. GEORGE'S HOSPITAL; OBSTETRIC PHYSICIAN, GREAT NORTHERN CENTRAL HOSPITAL.

(Received June 30th, 1894.)

(*Abstract.*)

A case of bleeding fibroid is cited, in which the above operation was performed as an alternative to oöphorectomy, the latter being impossible owing to the conditions present.

The procedure is compared with that of oöphorectomy: (1) anatomically, especially as regards the circulation; (2) as to result.

The principal theories concerning the amenorrhœa after removal of the appendages are mentioned and discussed. Changes in the circulation with lessening of blood-supply to the uterus are considered to form the chief factor in its causation—a theory supported by the history of the case given.

The blood-supply of the broad ligament is illustrated by an injection experiment.

A few notes from a long case will serve not only to illustrate the effect produced by ligature and division of the upper segment of the broad ligaments, but also to extend the inquiry as to why amenorrhœa is so generally produced by removal of the uterine appendages. The report of a single case is not of much value, but inasmuch as this operation is not likely to be repeated, the effects produced should be placed on record.

The patient, A. C—, who was 47 years of age, had been treated as an out-patient at the Great Northern Hospital during several months for metrorrhagia due to a large fibroid uterus, the whole mass being the size of a cocoa-nut. Various drugs, *e. g.* ergot, hamamelis, hydrastis, bromides, and sulphate of magnesia, as well as vegetable dieting, had been tried without success, and owing to the continual floodings the woman was becoming very weak. In August, 1891, she was admitted as an in-patient, and it was decided to remove the appendages. This, however, could not be done, as they were so densely adherent that separation was practically out of the question.

Two ligatures were passed through the upper part of each broad ligament, one close to the uterus, the other about one inch away, including the tube and ovarian artery. The latter were then divided between the knots. The patient made a good recovery. No metrostaxis followed the operation. After two months there had been no hæmorrhage, and the tumour was smaller. All went well till the end of the third month, when the metrorrhagia commenced again, and gradually become as profuse and frequent as ever.

Six months after the operation, the bleeding being still copious, the uterus was removed *per abdomen* by the extra-peritoneal method, and the woman was soon quite well.

Remarks.—My object is to draw a comparison between the temporary amenorrhœa produced by the operation described, and the permanent amenorrhœa usually brought about by oöphorectomy, hoping thereby to cast some light on the causation of the latter. As to why removal of the appendages so generally puts a stop to menstruation, there is still difference of opinion. There are four principal theories: (1) tubal; (2) nervous; (3) ovarian; (4) circulatory.

(1) Mr. Lawson Tait says, "In a pretty large proportion of cases (probably 30 per cent.) in which both ovaries are thoroughly removed, but where the uterus and tubes are untouched, menstruation goes on undisturbed."

Again he says, "I have found by clinical experience that removal of the tubes without touching the ovaries at all will arrest menstruation in about 95 per cent."

(2) Dr. Johnson, in the 'American Gynæcological Journal,' 1888, says that "a nerve-trunk which runs in the angle between the round ligament and the tube is a possible governing structure for menstruation, and that section of this does exactly what section of the chorda tympani does to the submaxillary gland." With reference to this Mr. Tait says, "I always aim now for the destruction of this trunk, and since I have done so my exceptional failures have diminished beyond doubt."

(3) The ovarian theory is refuted by the facts that the ovaries have several times been removed without cessation of menstruation, and also that cystic disease on both sides has not caused amenorrhœa.

(4) Lastly, are the effects produced by oöphorectomy due to lessening of blood-supply ?—a result readily suggested by the usual suppression of menses after the operation.

In oöphorectomy a considerable segment of the ovarian artery, in its course through the broad ligament, is in ordinary cases removed, so that the uterus is deprived of the blood brought by it. No collateral circulation can take place, and the uterine artery has to do all the work of supplying the uterus up to the summit of the fundus. This amount of blood would be small and specially inadequate for the wants of a fibro-myoma, the supply not being sufficient for menorrhagia or metrorrhagia to occur.

In the case cited in this paper, the ovarian artery was only tied and cut near the uterus, and so all its branches to the broad ligament and its structures were left intact, but the uterus itself was deprived of supply from it. Temporarily the same condition existed as after oöphorectomy as far as the uterus was concerned, *i. e.* the supply to it by the ovarian main trunk was cut off. The many branches of the ovarian artery to the tubes and ovaries, and those running down and across the broad ligament to the

trunk on the side of the uterus, which is formed normally by the uterine and ovarian vessels and which acts really as a reservoir, were in this case left intact.

Now, presumably in time all these branches would become dilated, and would probably eventually by helping the branches of the uterine cavity, and also by running directly to the lateral trunk on the uterus, bring in as much blood as originally. This perhaps happened here, and so the hæmorrhage returned. That there is an anastomosis in the broad ligament between the uterine and ovarian branches I think is shown by an experiment I have made in the way of injection. The ovarian artery was injected with red size, and the uterine with blue. On holding the broad ligament before a light, red vessels were seen in the upper part and blue ones in the lower part, while in each case on nearing the centre the colour changed to a mauve, and the same gradation of tint was seen in the superficial vessels on the sides of the uterus after a thin section had been cut off.

In oöphorectomy, a considerable segment of the ovarian being removed, the collateral circulation cannot be established, and so the blood-supply to the uterus is practically only from the uterine artery. Hence it is that when a fibroid is present, it decreases in size after the operation; in fact, the uterus itself has become smaller in cases where removal of appendages has been performed as a treatment for neurosis. The occasional failure of oöphorectomy to prevent bleeding would be accounted for, I should suggest, by an incomplete removal, *i. e.* when only a very small segment of the ovarian artery is removed, or possibly where the artery is left intact. In conclusion, the case quoted, and the experiment on the circulation of the broad ligament, appear to support the circulatory theory.

Dr. Peter Horrocks said the case, though short, opened up a wide subject. He had never himself seen a case where both ovaries had been completely removed and yet menstruation had continued for any length of time. Operators knew how difficult it was in many cases, particularly in fibroid tumours of

the uterus for which oöphorectomy was done, to be quite sure of removing the ovaries entire. On the one hand if the ligature was placed close to the tumour, and the pedicle cut close to the ligature, there was grave risk of hæmorrhage from slipping of the pedicle, and on the other hand if the ligature was placed further from the tumour and the pedicle cut as near the ovary as possible so as to give a good distal portion, then a small bit of ovarian tissue was very apt to be left in this distal portion, and this was quite enough to keep up menstruation. He had never been able to find the nerve which was said to influence menstruation, and he should like to be convinced of its existence before accepting this view of its function. There could be no doubt about the influence of the nervous system upon menstruation. He quoted cases of amenorrhœa from shock. But he still believed that the ovaries were essential to the function of menstruation, and that whilst ovulation could take place without menstruation, menstruation could not take place without ovulation.

Dr. William Duncan said that though the last speaker had seen no case in which the catamenia continued after removal of the ovaries, and that he believed when such an occurrence happened it was due to incomplete removal of those organs, he (Dr. Duncan) had four cases in which, many months after *complete* removal of the appendages, the patients suffered from menorrhagia, to account for which he was at a loss, except that the ligatures tying the stumps of the pedicles were perhaps causing irritation. Again, he had several cases in which the ovaries and tubes were so completely matted down in the pelvis that although he was able to tie the stumps beyond the ovaries, still he had thought it safer in cutting across the pedicle to leave a little of the firm ovarian tissue so as to prevent slipping of the ligature, and yet in none of these cases had there been any subsequent menstruation. He believed that as long as no ovarian tissue was left at the proximal side of the ligature, a little left on the distal side was of slight moment.

The President thanked Dr. Remfrey on behalf of the Society for his report of an interesting case. Other cases had been published in which the broad ligaments had been tied, by Dr. Murphy in the Society's 'Transactions,' vol. xxvii, and by Dr. Kilner Clarke in the 'British Medical Journal,' 1893, and in these menstruation was not arrested. It had been proposed to tie the broad ligaments in order to arrest the growth of malignant disease. Dr. Remfrey's case, with the others that he (the President) had referred to, had an important bearing on this proposition.

Dr. Amand Routh pointed out that there was another explanation of hæmorrhage persisting after the removal of the appendages for bleeding fibroids besides the occasional fact

that the ovaries had been incompletely removed, viz. that a polypus might have been present, unsuspected, and would continue to cause metrorrhagia. He had dilated the uterus in three cases of persistent hæmorrhage after oöphorectomy, finding a polypus in two, and a cluster of villous growth in the other. This showed the importance of exploring the uterine cavity wherever possible before removal of the appendages in cases of fibroids. He believed that although the ovaries greatly influenced the menstrual cycle, it was through the medium of nerves (ganglionic), passing between the ovary and uterus, and it must be remembered that in any operation for the removal of the ovaries, not only were the tubes and ovarian vessels also removed, but with them many nerve filaments, so that it was impossible altogether to ignore the nerves as the cause of menstruation.

Dr. Remfry, in reply, thought the suggestion that the temporary amenorrhœa in the case was probably caused by shock could scarcely be supported, considering the comparative slightness of the operation, and the fact that menstruation did not return for three months. The interference with the circulation as shown in the paper readily accounted for it. He could not agree with Dr. Horrocks's opinion that removal of both ovaries ensured amenorrhœa, as many cases had been brought forward in which complete extirpation of those organs had failed to bring on a menopause. The explanation given that in such cases complete removal of all ovarian tissue was not effected, and therefore that amenorrhœa did not follow, was naturally not easy to refute, and the basis on which it rested was considered insufficient. As to the argument that shrinking of the ovaries at the menopause favoured this theory, Dr. Remfry pointed out that the ovarian atrophy in late life was only part of a general atrophy, viz. of uterus, vagina, &c., a condition accompanied by diminished blood-supply, and therefore that it rather strengthened the circulatory theory advocated in the paper than otherwise.

A CASE OF ADENOMA OF THE PORTIO VAGINALIS UTERI FORMING A DEPRESSED SORE OR ULCER.

By James Braithwaite, M.D.Lond.,

OBSTETRIC PHYSICIAN AND SURGEON TO THE LEEDS GENERAL INFIRMARY.

The case which I venture to bring before this Society shows the great variability of the type, both pathologically and clinically, which adenoma of the uterus is capable of assuming.

I have myself never before met with adenoma of the uterus in any other form than as a growth, usually at first polypoid. In the later stages of the disease destruction or breaking down occurs here and there in parts, just as in ordinary cancer, but never in the early stage of the disease, at least not in my experience, nor can I find any record of adenoma forming a nearly stationary depressed ulcer.

S. W—, aged 54 years, was admitted into the Gynæcological ward of the Leeds Infirmary in September, 1893. She was a worn-looking woman, thin, and in poor general health. She had had three children at full term, and four abortions, the last being eighteen years ago.

Menstruation ceased at forty-six, and she remained free from any discharge until two years ago, when she became subject to what she calls a "yellow-coloured discharge," not, however, much in quantity, but pretty constant. There was no pain. On examination a suspicious place was felt to the left side of the os, which on putting the patient in the lithotomy position could be brought within easy examination by the eye.

It then appeared to be a shallow ulcer, for it was a

little below the general level of the surface. The colour was a dull red, and strongly contrasted with the surrounding paler mucous membrane. It was in diameter two thirds of an inch, and nearly circular. It bled very much on even very gentle examination with the finger. I thought it was not cancer on account of its extreme softness to touch. There was not the least crispness, and no apparent up-growth. It seemed quite superficial, and there was no trace of infiltration in the surrounding parts. The length of the history of the case also favoured the idea of its not being epithelioma, at the same time the age of the patient and the ready occurrence of hæmorrhage rendered the matter doubtful. I removed the growth with the scalpel and scissors, so as to go as I thought at the time beyond and beneath it, and afterwards curetted the base well with a sharp Volkman's spoon. The tissues broke down somewhat deeper under curetting, but to the eye were normal in colour. I afterwards had some doubts whether I had done wisely in not removing the whole of the supra-vaginal portion of the cervix, and therefore a few days afterwards applied chloride of zinc. A deep slough resulted, and the patient was discharged in a few weeks with the part all but healed and apparently free from disease.

The portion removed, which embraced the whole diseased part so far as the eye could judge, was hardened in Müller's fluid, and as much as possible being preserved, sections were made.

The part not so used is now on the table. It is much shrunk, but shows the depressed surface of the diseased portion. When freshly removed it included the bottom or deepest part of the visible disease, but as the result of microscopic examination there can be no doubt that the whole of the disease in depth was not removed as I thought at the time. Probably as the curette was very freely used the whole was subsequently removed.

Sections of the ulcer, for growth it cannot be called, show it to be glandular, or an adenoma. The new gland

tissue, however, is almost everywhere lined with one layer only of epithelium, and contrasts so much with undoubted malignant adenoma that the idea occurs to me that possibly adenoma in the uterus may not, as supposed, be invariably malignant, or at any rate that there may be a form of it which is merely bordering on malignancy.

The accompanying coloured drawing is nearly as good as a photograph, and is accurate almost line for line, as the artist who did it has a plan of projecting the microscopic view on to the paper, where it is copied accurately.

In order to show the difference between this and genuine malignant adenoma of the uterus, it may be well to compare it with similarly executed drawings from another and undoubtedly malignant case. In these the proliferation of epithelium is very marked. The original slides are before you that you may judge of the accuracy of the drawings. The main clinical fact which makes this case peculiar is the absence of any up-growth, the diseased surface being, indeed, below the general level. It had, judging by the history, existed for two years, and still had spread but little. In its clinical features, therefore, it seems to bear almost the same relation to true adenoma that rodent ulcer does to cancer. The patient has been recently examined, and there is no return of the disease.

Dr. Dakin thought that everyone would agree with Dr. Braithwaite that his case was of an adenomatous nature, but from the description of the clinical appearances, of the microscopic sections, and from the history and subsequent events, it was difficult to see the distinction between the case in question and one of erosion of the cervix. The fact that there was a depression was possibly an accident, and due to the erosion having appeared over an area already depressed, seeing that the woman was a 3-para. The histological appearances were those of an erosion, namely, sections of numerous glands like those of the cervix, and not showing any sign of commencing malignant action.

Dr. Amand Routh alluded to the well-known fact that a cervical adenoma was extremely prone to become malignant through proliferation of the columnar cells lining the acini, and it was possible that this change had occurred in that portion of

the adenoma where the ulceration had been seen, although the microscope did not prove it.

The PRESIDENT said that Dr. Braithwaite's case was a very unusual one, and an obscure one. Had it not been that the surface of the ulcer was depressed, he thought everyone would have thought it an ordinary erosion. The microscopic structure resembled that of an erosion; there was no infiltration, and there was no statement that the patient had wasted.

JULY 4TH, 1894.

G. ERNEST HERMAN, M.B., President, in the Chair.

Present—43 Fellows and 3 visitors.

Books were presented by the Middlesex Hospital Staff and La Société Obstétricale et Gynécologique de Paris.

W. Gilbert Dickinson, L.R.C.P.Lond. ; Thomas Vincent Dickinson, M.D.Lond. ; Bernard F. Hartzhorne, M.R.C.S. ; and Hugh Playfair, M.D., were admitted Fellows of the Society.

The following gentlemen were elected Fellows :—Roland Danvers Brinton, B.A., M.D.Cantab. ; David Fairweather, M.D.Edin. ; John Arnallt Jones, L.R.C.P.Lond. (Aberavon) ; Albert William Denis Leahy, M.D.Durh., F.R.C.S.Eng. (Calcutta) ; Æneas John McDonnell, M.B.Sydney (Queensland) ; and David Petty, M.B., C.M.Edin.

The following gentleman was proposed for election :— Robert Kingdon Ellis, M.B., B.Ch.Oxon.

THE MENSTRUATION OF *SEMNOPITHECUS ENTELLUS*.

By WALTER HEAPE, M.A.,
ZOOLOGICAL MUSEUMS, CAMBRIDGE.

I HAVE been invited to lay before you this evening a few sections demonstrating the process of menstruation in

S. entellus, and at the same time to make some remarks upon the work I have lately done on the subject.

In the first place I should perhaps lay before you some evidence to show that menstruation does actually take place in monkeys.

Geoffroy St. Hilaire and Cuvier found that in three different species there was a regular monthly discharge of blood from the generative organs; these species were Cercopithecus, Macacus, and Cynocephalus.

Mr. Bartlett, Superintendent of the Zoological Gardens here, informs me that monkeys kept in the gardens menstruate, and Mr. Sutton*, who has published an account of his researches on the process in *M. rhesus*, states that this species menstruates fairly regularly.

It is, of course, highly probable that tropical or semi-tropical animals when brought to England will suffer from derangement of physiological processes, and it would not therefore be surprising to find that the regularity of such a process as menstruation is interfered with, to some extent, in individual monkeys when kept in confinement here. From the description given by Mr. Sutton I can only conclude that in the animals he examined some such derangement had occurred, for when in Calcutta I kept a considerable number of these animals alive, and found that menstrual phenomena were exhibited with remarkable regularity. I have also kept *M. rhesus* in Cambridge for a short time, and two of the specimens in my possession menstruated regularly for three months. A flow of blood from the vagina was observed to last from three to five days, and the mean dates were, in specimen (*a*), May 7th, June 2nd, and July 6th; in specimen (*b*), May 11th, June 11th, and July 6th.

Mr. Sányál, the Superintendent of the Zoological Gardens at Calcutta, assures me that all monkeys menstruate regularly there, and I myself observed the phenomenon in a specimen of *Cynocephalus porcarius* for two months, and in a specimen of *M. cynomolgus* for three

* 'Brit. Gynæcolog. Journ.,' vol. ii, 1880.

months; the latter specimen exhibited a flow of blood from the vagina on December 20th, January 20th, and about February 20th. Finally, with regard to *S. entellus*, I satisfied myself that those animals which were kept under observation, menstruated each month from January until April, and that the flow of blood from the vagina lasted about four days.

At the time the material for this work was collected the breeding season for *S. entellus* was practically over, only a few specimens being found in which evidences of recent delivery were shown. In order to guard against the confusion of phenomena connected with pregnancy and those solely due to menstruation, special care was taken that no specimen should be used for this work in which the mammary glands gave any evidence of lactation, or in which the uterus was of abnormal size or consistency. I may add that the uteri of such animals as had recently borne young were readily distinguished from menstruating uteri by their size, consistency, and the colour of their mucous membrane; they were much larger, much softer, and more flabby; the muscular coat showed decided signs of having been stretched recently, and the mucous membrane was very soft and of a yellowish brown colour.

The external signs of menstruation are very variable in extent in monkeys. An enlargement of the vulva and of the nipples is invariably seen; and in *S. entellus*, where these parts are coloured black, this is the only sign I have observed to accompany the discharge of blood. In *M. rhesus*, however, the nipples and vulva are not only swollen but they are highly congested and assume a deep red colour, while the skin of the buttocks, which is wrinkled and hard during the intermenstrual period, becomes during menstruation, soft, swollen, tense in fact and most brilliantly red in colour; further, the abdominal wall for a short distance upwards, the inside of the legs as far down as the heel in some cases, and the under surface of the tail for more than half its length are also coloured a vivid red.

In the baboons the swelling of the bare skin of the buttocks is enormous ; a specimen of the Chacma baboon (*C. porcarius*), which I had an opportunity of seeing in the Calcutta Gardens, evidently suffered very considerable inconvenience at such times ; the orifice of the vagina and rectum were nearly closed altogether, the skin seemed swollen almost to bursting point and resembled both in tensity and colour a huge tomato ; the care with which the animal sat down showed plainly enough that these parts were very tender.

In connection with this subject the nervous communication between the flushed area on the buttocks, thighs, and tail of *M. rhesus*, and the vagina, is of interest. Langley and Sherrington* have demonstrated that the motor roots of the first, second, and third sacral nerves supply the vagina, while the sensory roots of these same nerves supply the skin of the flushed area described above.

The menstrual discharge from the vagina of *S. entellus*, *M. rhesus*, and *M. cynomolgus* consists of a white, stringy, mucus-like material ; together with blood-corpuscles, squamous epithelial cells, columnar epithelium, and connective-tissue corpuscles in variable quantities and proportions. The discharge from the Chacma baboon I was unable to obtain for examination, as the animal was very savage, but it was noticeable that the discharge was more of an opaque white and less coloured with blood than in the other species of monkey. Whether the enormously swollen and deeply congested tissue around the genital opening of this baboon has the effect of withdrawing from its uterine tissue a considerable proportion of the blood which would otherwise serve to congest its menstruating mucosa I am unable to say, but it would seem to be not altogether improbable such is the case, and that the amount of menstrual blood discharged may be to some extent inversely proportionate to the amount of swelling and congestion of the external parts.

I have for convenience divided the various phenomena

* 'Journ. of Physiology,' vol. xii, 1891.

which take place in the uterus of *S. entellus* during menstruation, into four periods, and have subdivided the periods into eight stages; and, as the preparations under the microscopes will show, these periods and stages are very readily demonstrable; they are as follows:

A. Period of rest. Stage I, the resting stage.
B. „ growth. Stage II, growth of stroma.
Stage III, increase of vessels.
C. „ degeneration. Stage IV, breaking down of vessels.
Stage V, formation of lacunæ.
Stage VI, rupture of lacunæ.
Stage VII, formation of the menstrual clot.
D. „ recuperation. Stage VIII, recuperation stage.

The uterine mucosa has the appearance of a very primitive tissue and, as I shall endeavour to show, it performs the functions of a primitive tissue. It consists of an epithelium of a single row of cubical cells, continuous with the epithelium of numerous straight, rarely branching uterine glands which are embedded in the subepithelial layer or stroma, as I have called it. The stroma is practically of the nature of a plasmodium, a vast number of nuclei are connected together by protoplasmic processes which form in the quiescent, intermenstrual period a loose network. There is in this tissue no indication of separate cells, the protoplasm surrounding one nucleus is continuous, by means of its thread-like processes, with similar processes formed of the protoplasm surrounding neighbouring nuclei, the whole forming a loose network in which blood-vessels and glands are embedded. The stroma is bounded on its superficial side by the uterine epithelium and on its lower side by the inner circular muscle layer of the uterine wall, and it is the stroma which is chiefly concerned in the process of menstruation.

From the inner circular muscle layer a few radial muscle-fibres branch off here and there into the stroma, but otherwise these layers are sharply separated the one from the other.

The mucosa which, during the quiescent intermenstrual period has the appearance of a soft, semi-transparent, loose tissue, becomes first swollen during Stage II owing to the growth of the stroma by the multiplication of its nuclei in the superficial region, and thus assumes a denser and more opaque appearance; it then becomes congested, its blood-vessels increasing first in number and then in size (Stage III), and this causes the flush, which is very noticeable when a uterus of this stage is first cut open.

Later (Stage IV), the vessels in the superficial part of the stroma become first hypertrophied, then degenerated, and finally they break down, the blood contained in them being extravasated into the meshes of the stroma network.

Gradually the extravasated blood collects into lacunæ, which increase greatly in size and eventually come to lie close beneath the uterine epithelium (Stage V); this stage may be diagnosed, when examined superficially, by the presence of specks of a dark red colour scattered about on the flushed surface of the mucosa, and by the absence of any free blood in the uterus, while histological examination further shows hypertrophy and degeneration of the superficial portion of the stroma tissue.

I would here draw attention to the fact that it is on the dorsal side of the uterus that these specks first make their appearance, and that it is the dorsal lobe of the placenta of these monkeys which is first developed in pregnancy.

The presence of free blood in the uterus is the next step in the progress of menstruation (Stage VI); it is caused by the rupture of the lacunæ and the pouring out into the cavity of the body of the uterus, of the blood contained therein. While finally (Stage VII) the menstrual clot is formed of this blood, together with masses of stroma tissue, pieces of uterine glands and capillary

vessels—largely degenerated tissue—which is torn away from the uterine wall by the rupture of the lacunæ and the rush of blood from the torn vessels. It is noticeable that only the superficial third of the stroma layer is thus cast off. I have been unable to distinguish characteristic decidual cells in any part of the tissue which is thus shed, and have on that account adopted the term introduced by Wyder*, viz. menstrual mucosa, to describe it; instead of the term menstrual decidua, which is used by many authors to denote the menstrual tissue of the human subject. I should also mention here that there does not appear to be any very considerable flow of mucus from the uterine glands, and that a clot is always found, in some cases of considerable size, within the uterine cavity at this stage.

Before the clot is expelled from the uterus the recuperation (Stage VIII) begins. A fresh epithelium grows over the torn surface; at first it is formed of flattened cells, and these gradually assume a columnar form. New vessels are formed, which eventually communicate with those already existing in the deeper parts of the stroma, and after the menstrual clot has disappeared the stroma itself gradually shrinks, drawing after it the newly formed epithelium, and assumes again the proportions and consistency described for the inter-menstrual period, *i. e.* Period A.

There are several facts of considerable interest connected with this recuperative process, such as the relation of the upper and lower parts of the stroma, the changes which take place in the nuclei and protoplasm of the stroma, the flow of blood, the formation of the epithelium, the reclamation of extravasated blood in newly formed vessels and the method of the formation of those vessels, and the behaviour of leucocytes; to all of which I have paid some attention. I will, however, here mention only the last three.

First, the formation of the epithelium. Some of the epithelium is undoubtedly derived from the torn edges of

* 'Arch. f. Gynækologie,' vol. xiii, 1878.

the epithelium of the portions of such glands as remain embedded in the deeper parts of the stroma after the menstrual mucosa has been cast off, and here it is formed by the division and multiplication of the cells of the pre-existing epithelium; but other parts of the new epithelium are formed in regions where there are no glands remaining, and from whence the original epithelium has been cast off. Here stroma cells may be observed which, becoming flattened, take upon themselves the character and function of epithelial cells, and they fuse with those portions of the same layer derived from the glands, and form a continuous uterine epithelium over the whole surface of the mucosa.

Secondly, the reclamation of extravasated blood-corpuscles in newly formed vessels. When the new epithelium is formed over the torn surface of the mucosa, great numbers of extravasated blood-corpuscles, which are at the time lying amidst the meshes of the superficial part of the remaining stroma, are also enclosed, and I find they are neither absorbed nor degenerated, but are reclaimed and returned to the circulatory system. Wherever a group of such corpuscles, or even a single corpuscle, is seen lying free in the stroma, there a vessel is formed more or less minute according to the number of blood-corpuscles requiring to be included. The vessels are formed from the stroma tissue which immediately surrounds the free blood-corpuscles; the protoplasmic processes become flattened and joined together to form capillary vessels, which eventually communicate with those pre-existing in the deeper part of the stroma layer, whose superficial loops have been torn away. This method of the formation of capillaries has not, as far as I have been able to discover, been recognised in any adult mammalian tissue.

The capacity of the stroma tissue to form new epithelium, new glands (for new glands are formed by the folding inwards of the newly constituted epithelium), and new vessels, in short the great recuperative power exhibited by the indifferent elements of the stroma, indicates the

elementary nature of that tissue. The history of the development of the uterus shows that this organ with its epithelium, glands, and vessels, is derived from one and the same embryonic layer, the mesoblast, and it is of great interest to observe that the renovation of these parts is possible at all times from the stroma itself. The circumstance points, in my opinion, to the retention by the stroma of embryonic powers, powers which are probably retained in consequence of the regular and persistent calls for growth and recuperation to which the tissue is subjected.

The third point I would mention is the behaviour of the leucocytes. A great increase of leucocytes is observed in the vessels of the mucosa during their congestion and during the period of degeneration (Period C). When the vessels break down and the blood-corpuscles are scattered amidst the stroma, these leucocytes cling to the remnants of the walls of the vessels. Some of them, it is true, are washed out with the blood-corpuscles into the surrounding tissue, but these are few in number; the great bulk of leucocytes attach themselves to the remnants of the torn vessels. If, as happens in the superficial part of the mucosa, these vessels are included in the tissue cast off to form the menstrual clot, the leucocytes are also cast off, but great numbers of them remain clinging to those portions of the vessels which are retained in the submenstrual mucosa, and these are, like the blood-corpuscles themselves, reclaimed and sent back to the circulatory system. They take no part in the formation of new tissue, they do not form pus on the wounded surface, and they at no time migrate voluntarily into the surrounding tissue. This behaviour of the leucocytes is, I think, not without much interest; whatever may be the cause of their increase in number, whether it is the presence of irritating material in the blood, as Metschnikoff's researches* would seem to indicate, or whether from any other of the various causes suggested by other observers, the fact

* 'Leçons sur la Pathologie comparée de l'Inflammation,' 1892.

remains that they apparently do little when they are there, and that they are eventually sent back from whence they came.

There seems much to be said for Metschnikoff's views, supported as they are by his admirable experimental work; he may briefly be said to urge that it is the presence of an inflammatory substance in the blood or in the tissues which draws leucocytes to the parts so affected for the purpose of absorbing the irritating material. If the irritant be in the blood the leucocytes remain in the vessels, if it be in the surrounding tissue the leucocytes migrate from the vessels into that tissue and attack the irritating material *in situ*.

In this instance—menstruation—the leucocytes do not migrate into the tissue, they remain in the vessels, so that it may be inferred the irritant is in the blood, and I would suggest it is owing to the fact that large quantities of blood are expelled out of the body *viâ* the generative canal, that the irritant is in that manner lost and the presence of the leucocytes rendered unnecessary.

With regard to the origin of this irritating material, the evidence at our disposal appears to point strongly to the probability that it is produced locally, while the congestion of the vessels and the degeneration of the tissue of that part of the mucosa may be urged to be sufficient cause for the production of the irritant.

If, from any cause, menstruation does not take its usual healthy course, the leucocytes will probably have their work to do, but I am ignorant of the histological changes which take place during abnormal menstruation, and do not venture any opinion as to what their action may be under these circumstances. What does appear to be highly probable is, that the irritant which is presumably present in the blood is thrown off, together with the mucosa menstrualis, in the menstrual discharge, and that nothing of it remains during the recuperation stage.

Finally, I would suggest that sufficient stress has not been laid upon the four periods of the menstrual cycle,

and that a consideration of them, although it does not explain the origin, yet it leads to an explanation of the function of menstruation which is in accord with the opinions of a large proportion of the gynæcologists of the present day; this function being, the expulsion of tissue which is produced by a growth of the mucosa at certain regular periods, when that tissue is not required for the purposes of gestation. In conclusion, I will merely add that I am unacquainted with any natural process throughout the animal kingdom which can compare in severity and completeness with this periodic menstrual phenomenon.

Mr. Alban Doran asked if Mr. Heape had discovered which were the lowest of the mammalia where menstruation, or some phenomenon clearly homologous to it, could be observed. Even in man the catamenia were influenced by climate. The results of medical exploration amongst the northernmost Esquimaux, recently read before the New York Obstetrical Society,* deserved consideration. During the long Arctic winter total suppression of the catamenia was normal. The sexual passion was also suppressed, in the men as well as in the women, at that season. The significance of the changes in the endometrium in *Semnopithecus entellus* deserved consideration. That mucous tract was, as Mr. Bland Sutton had shown, of simple structure in that monkey, yet it underwent important changes. These changes probably meant that the uterus must be kept constantly ready for the development of the decidua after impregnation. The fœtal *Semnopithecus*, belonging to a high type, had to pass through complicated developmental changes before birth, which demanded a correspondingly complicated system of appendages to foster it. The endometrium repeatedly started these changes on its own part, but if impregnation did not occur it was partly shed and the process began again. In lower types of life a complicated nidification was not needed, hence menstruation, a part of that process, did not occur.

Dr. Griffith said that in their main features the microscopical characters of the sections exhibited by Mr. Heape were identical with those of human uteri which he had examined, and in this respect he differed from Mr. Bland Sutton's remarks.

Dr. Amand Routh alluded to the great difference which Mr. Heape had shown to exist, in this monkey at all events, between repair of wounds in the uterine lining membrane as compared

* Dr. Frederick Cook, 'New York Journal of Gynæcology and Obstetrics,' March, 1894, p. 282.

with repair of skin or of other mucous membranes. If it was a fact that the epithelium and glands of the uterine lining membrane could be replaced from cells of the "stroma" or submucous layer, it would go far to explain the rapidity with which the membrane was restored after scraping even with a sharp curette, for the membrane seemed to be grown again between the next and subsequent periods, and occasionally had again become redundant in three or four months, even to the extent of requiring another curetting.

The PRESIDENT said he was sure he expressed the unanimous feeling of the Society in thanking Mr. Heape for coming among them that evening, and exhibiting and describing the beautiful series of preparations that were before them. The subject they illuminated was of the greatest importance, lying at the very foundation of minor gynæcology. We had at present hardly any knowledge of what took place in the human uterus during menstruation. One authority said the whole mucosa was cast off, others that only a part of it came away, and others that it remained entire throughout the process. There seemed to be similar differences in the results derived from observations on animals. Mr. Bland Sutton had found that in macaques there was no loss of substance in the uterine mucous membrane during menstruation. Mr. Heape found that in the *entellus* part of the mucosa was shed. These results were not contradictory, for the process might be different in different animals. Mr. Sutton's observations were made on monkeys living in confinement, and in a climate unnatural to them, and so perhaps might represent an abnormal condition. He (the President) hoped Mr. Heape would state the number of observations he had made, the circumstances in which the animals examined had been living, and whether they were all healthy or not.

Mr. HEAPE, in reply to the questions of those present, gave a brief description of the signs of menstruation exhibited by the monkeys which he kept under observation both in the Zoological Gardens in Calcutta and in Cambridge, and mentioned the swelling of nipples and vulva, and the existence of a bloody discharge, lasting about four days, which recurred with remarkable regularity in individuals of the species *Semnopithecus*, and in two species of macacus as well as in *Cynocephalus porcarius*.

UTERINE FIBROID UNDERGOING COLLOID DEGENERATION.

By T. G. Stevens, M.D. (for Peter Horrocks, M.D.).

Dr. T. G. Stevens showed for Dr. Horrocks a fibroid tumour in the anterior wall of the uterus, undergoing mucoid or possibly colloid degeneration, and simulating ovarian cystoma and pregnancy.

The patient, aged 45, married and had borne children, two years ago became irregular and missed her periods, sometimes for three months at a time, and at the same time her abdomen began to swell. She was thought to be pregnant, and after waiting some time after labour ought to have supervened, she was admitted into a country hospital for an attempt to be made to clear the uterus. This failed, and she was then sent up to Guy's and admitted under the care of Mr. Lane. Now, the case presented clinically a large tumour, almost fluctuating and possessing a thrill, and in fact apparently an ovarian cyst. Abdominal section was advised and performed, but the tumour was found to be uterine. A more thorough examination could now be made, and owing to the peculiar degeneration of the tumour, a sensation as of solid lumps floating in a more or less fluid medium was found, and was strongly suggestive of a pregnant uterus. The operation was abandoned, and the patient made a good recovery. Dr. Horrocks was now called in to see what could be done with the contents of the uterus. He found the os uteri very high up and the cervix elongated; the sound passed seven inches. After dilatation with tupelo and laminaria tents, it was just possible to introduce the finger within the internal os uteri. Then the lower end of the tumour in the anterior wall could just be felt, and the uterine cavity was apparently empty. Dr. Horrocks then again advised operation, and removed the whole mass by abdominal hysterec-

tomy, using the serre-nœud and fixing the stump in the lower angle of the wound. Up to the present time the patient is doing well. The tumour consisted of a uterus with a dilated cavity and elongated cervix, with a large tumour in the anterior wall. The anterior wall was expanded and thickened over the tumour, forming a kind of capsule. The tumour itself consisted for the most part of solid fibroid material, with here and there large areas of mucoid substance.

Microscopically the tumour was a fibro-myoma, and the degeneration could be seen as affecting the fibrous tissue, giving rise to a cloudiness and loss of fibrillation, with here and there rounded spaces as if some material had fallen out.

Dr. Horrocks was indebted to the courtesy of Mr. Lane for the privilege of showing the specimen.

REMARKS ON FŒTAL RETROFLEXION: REPORT OF A SPECIMEN SHOWING ORIGIN OF GLUTEUS MAXIMUS FROM OCCIPITAL BONE.

By Leonard Remfry, M.A., M.D., B.C. (Cantab.),

ASSISTANT OBSTETRIC PHYSICIAN AND ASSISTANT LECTURER ON OBSTETRIC MEDICINE AT ST. GEORGE'S HOSPITAL; OBSTETRIC PHYSICIAN TO THE GREAT NORTHERN CENTRAL HOSPITAL.

(Received May 24th, 1894.)

(*Abstract.*)

Dr. Remfry discussed the causes of retroflexion as given by various authors, and divided them into (1) abdominal, (2) dorsal. (1) The abdominal were those in which either there was no cord at all—a condition generally associated with ectopia viscerum,—or in which the cord was present but short, a backward flexion in both instances being produced, with the placenta as the fixed point. (2) The dorsal causes belonged to various abnormalities of the vertebral column: (*a*) failure in development of spine as a whole, due to deficiency of spinal medulla; (*b*) imperfect construction of one or more bones; (*c*) absence of vertebræ; (*d*) any weakness of the spine from any cause whatever. In (1) the absence or shortness of cord was the essential element; in (2) the imperfect spinal axis.

In the case reported the flexion had taken place at the occipito-atloid joint; the occiput, which was incompletely developed, being bent over so that the posterior part of the head nearly touched the crests of the ilia. There was some latero-flexion to the left, and on this side the gluteus maximus was seen to have a distinct origin from the upper portion of the occipital bone. On the right side an encephalocele containing about three cubic inches separated the occipital bone from the crest.

Various other abnormalities were commented on, and a complete dissection of the specimen detailed.

The fœtus was full time. The presentation was pelvic. Prolonged traction effected delivery, but only after something was

felt to have given way. This afterwards was found to be the cord, which was two inches long. The author was indebted to Dr. Hincks, of Hay, for the interesting specimen.*

Retroflexion of the fœtus is a condition of great interest, and every specimen of the kind is sure to repay careful examination.

In this paper the object is to bring forward details of a curious and, what is believed to be, a unique case with origin of one gluteus maximus from the left upper portion of an imperfectly formed occipital bone, and also to place together some of the views already expressed relative to the causes of retroflexion.

First, to describe the fœtus, for which I am much indebted to Mr. Hincks, of Hay. The labour was very tedious. When the patient was first seen, a foot could be felt in the vagina. The other foot was brought down, and after prolonged traction on both legs delivery was effected. During the process a snap was felt as of something having broken. This was subsequently proved to be due to rupture of the cord, which was torn away at the umbilicus and remained attached to the placenta. It was two inches long. The child, which appeared to be full time, was dead.

Examination.—External appearances.—With the body in the upright position, the face looks to the sky. The features are apparently normal, but the ears are corrugated from above downwards very considerably, and the insertion is like a button into a cushion. Beneath the chin there is a swelling one inch deep, reaching from one ear to the other and filling up the submental angle and the angle between the cheeks and shoulders. The head is retroflexed so that the posterior part of the skull comes into relation with the crests of the ilia—the hairy scalp being flush with the level of the buttocks and merging directly into the skin of those parts. On tracing the lower lateral boundaries of the head, the thorax, the back of which the

* This is in the museum of the Royal College of Surgeons.

head completely covers, is also flush with the side of the head. On the right side and overhanging the right crista ilii is a collapsed sac which springs from the junction of the lateral and posterior aspects of the head, and from a large orifice in which brain matter exudes freely on compression of skull. This sac when distended would pro-

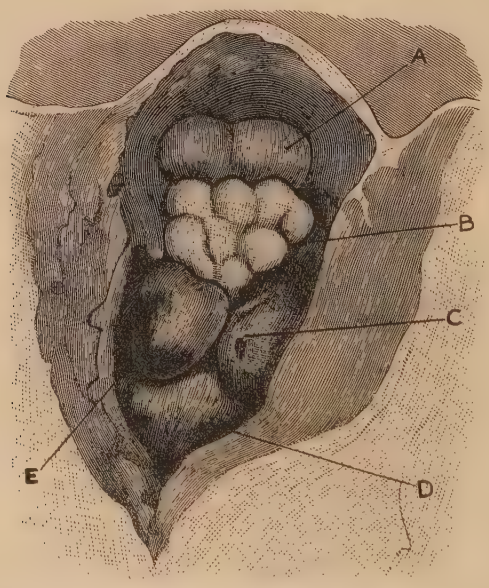
Fig. 1.

bably contain $2\frac{1}{2}$ to 3 cubic inches. There is no hair over the sac. On passing a finger through the opening it is found to enter a large cavity, the boundaries of which are cranial bones, which appear to be entire except in the situation of the lower portions of the occipital. The diameters of the head are: mento-frontal $2\frac{3}{4}$; binaural $2\frac{1}{2}$; biparietal $2\frac{3}{4}$; forehead buttock $4\frac{3}{4}$; bitrochanteric $2\frac{7}{8}$.

In the situation of the umbilicus there is a rounded and hard boss on the right side, and on the left is a fibrous cord the thickness of a digital nerve (? umbilical artery),

and some shreds of tissue not at present obvious. The upper part of the boss is covered with fairly well formed skin. The legs and arms are normal. The external organs of generation are those of a female, the hymen well developed. The central line of the perinæum is not covered with skin. To represent the anus, which is on a level with the brim of the pelvis, there is a hole in the skin. On looking deep down into this hole is seen another smaller one at the commencement of a tube (? intestine). (At a later stage of examination the tube was found to be the rectum, *i. e.* the anal involution had not joined the gut.)

Fig. 2.



A. Thyroid. B. Thymus. C. Heart. D. Diaphragm. E. Lung. Left lung not shown.

On opening the thorax, the following are seen from above downwards:—The thyroid, measuring 1 by $1\frac{7}{8}$ inches; the lobulated yellowish-white thymus, measuring $1\frac{3}{8}$ by $\frac{1}{2}$ inch; the intensely pink lungs, showing no appearance of

respiration having occurred, overlapping the heart; lastly, the arching diaphragm. The thyroid, on being removed, is found to consist of four lobes—two principal middle lobes and two small lateral ones (microscopically the structure was normal). The thymus was weighed, and scaled 19 grains.

On opening the abdomen, the liver is very large, and of a curiously irregular shape. At its lower edge projects a pedunculated portion, the size of a large cherry, into a cavity of amnion which was described as a prominence on the abdominal wall. The liver is adherent, above to the diaphragm and at the sides to the abdominal walls.

On removing the skin of the back and dissecting further, the gluteus maximus on the left side is seen to have an extra origin from the left upper part of an imperfectly developed occipital bone.

The specimen has been dried in order to show the exact original position of the head and the excessive flexion of the cervical on the dorsal vertebræ. The head is rather on one side, owing to the encephalocele having protruded from the right side and levered it to the left.

The doubling over of the cervical vertebræ, and the resting of the head upon them when the fœtus is lying on its abdomen, are well shown.

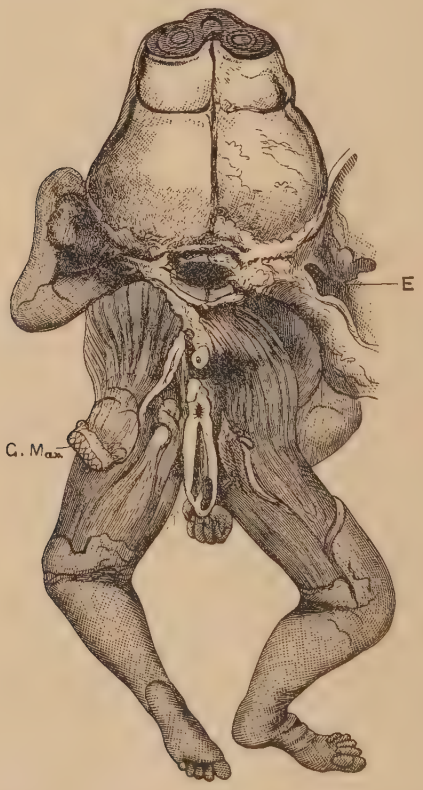
Description of skeleton by Mr. Stonham.—Skull.—The facial, frontal, and parietal bones are normally developed; palate normal; intermaxillary bones perfect.

Occipital bone.—The basi-occipitals and ex-occipitals are developed. The tabular portion is represented by two crescentic curved plates of bone, separated by a large opening, bounded in front by the posterior margins of the parietals and partly closed below by the displaced spinal column. The opening is wider from side to side than from above downwards. The posterior fossa of the skull is consequently in great part formed by the posterior surface of the bodies of the vertebræ and by the spreading neural arches.

The free margin of the right representative of the tabular occipital bounds the above-mentioned opening, but

anteriorly it comes almost into contact with the neural arches of the dorsal vertebræ. On the left side the corresponding margin is in contact with the neural arches

FIG. 3.



E. Encephalocele. G.Max. Cut end of gluteus maximus. Fibres shown on occipital bone above.

of the lower dorsal and lumbar vertebræ. On each side, but better seen on the left, a gap exists between the ex-occipital and the neural arches. This gap represents the jugular foramen.

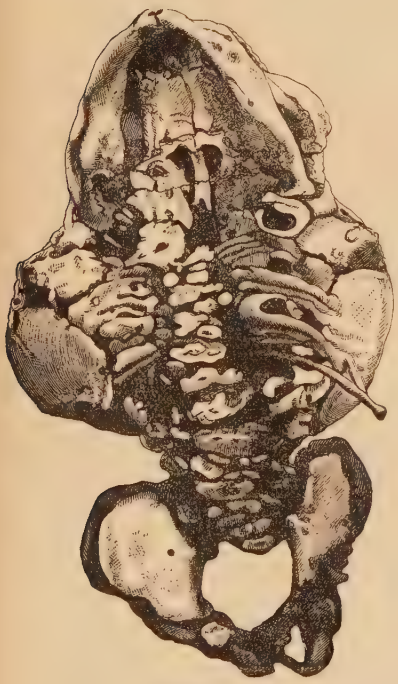
Temporal bone normally developed, and the three parts easily recognisable. On the left side the tympanic ring

is present. On the right it is absent, and the membrana tympani and malleus are disclosed.

Spinal column.—The coccyx is absent, having been lost in maceration (*vide* lower surface of last vertebra). The bodies of the vertebræ cannot be accurately counted, since ossification is very irregular and many additional centres are present.

There is complete spina bifida, the neural arches gaping widely, giving the posterior surface of the spine a

Fig. 4.



Front view.

Fig. 5.

Back view.

boat-shaped appearance. From its articulation with the ex-occipitals the spinal column curves forwards on the basi-occipitals for a short distance, and then abruptly backwards and somewhat upwards, so that the terminal vertebra

present (? last sacral) is distant about one inch from the posterior margin of the left parietal. In addition to the curvature mentioned, the whole column inclines to the left of the middle line, and hence the approximation (already noted) of the left neural arches to the left tabular occipital and the separation on the right side.

Ribs.—Irregularly developed, especially on the right side, where they are represented by short columns of bone more or less welded together. On the left side eleven can be counted. Some of them are joined at their angles, and the seventh and eighth of the series are united at

FIG. 6.

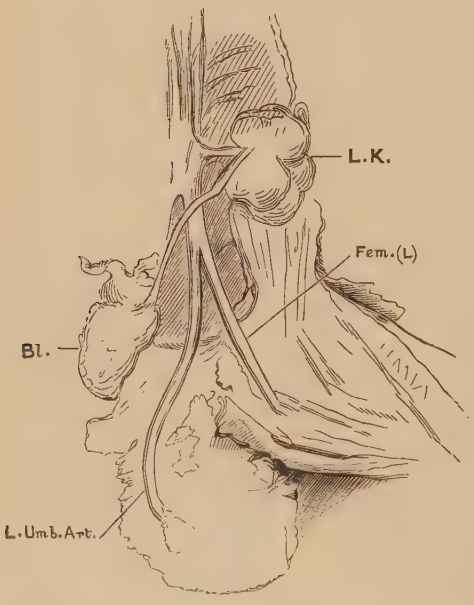
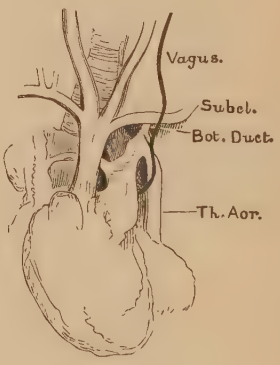


FIG. 7.



their heads, forming a flattened plate, the whole having a V-shaped appearance.

In the above general report of the examination of the fœtus, the abnormalities chiefly have been noted. The circulation, intestines, &c., not mentioned, were, however, carefully examined.

Remarks.—To come, finally, to the causes of fœtal retroflexion hitherto given. For the demonstration of these we are chiefly indebted to the papers of Dr. Matthews Duncan, Dr. Hurry, Dr. Dakin, and Mr. Lockwood. They may be spoken of as (1) abdominal and (2) dorsal causes.

In cases in which there is no umbilical cord and the embryo is directly adherent to the placenta,—a condition associated or not with ectopia viscerum,—"there is a flexion on the fixed point, viz. the placenta," and the anterior and posterior extremities are pushed backwards. The same condition may be brought about by a very short cord, and probably the shorter the cord the greater the liability to ectopia. When the placenta is not in the median line, and there is no cord, lateroflexion is produced, but not necessarily in cases where there is at all events some cord.

Then, retroflexion from dorsal causes may be due, as in the case of Mr. Lockwood's embryo, to some failure of development of the spinal column, owing, in his case, to deficiency of the spinal medulla, this in turn being the fault of the original epiblast from which the medulla is developed. An imperfect development of the spinal axis would, especially when the abdominal wall is firm and the contents of the abdominal cavity well formed as to bulk, tend to produce a dorsiflexion simply from a weakness of the vertebral column, which normally forms a support for the fœtus as a whole. In fact, imperfect construction of this column introduces a hinge which is easily brought into play so that the parts above and below tend to be brought nearer to each other, and not suddenly so, but gradually during the embryo's slow growth.

Absence of vertebræ will produce a flexion backwards at the deficient point, the vertebræ above and below tending to approximate. If this absence be in the centre of the column, the upper and lower halves will approach one another equally. If it be in any other situation than central, then the shorter portion of the column will be more flexed than the longer. Thus, in the same way, if

the occipito-atloid function be incomplete, the head being the shorter arm of the lever should be extremely flexed backwards. Such is the condition in the case described. As to the arrangement of the gluteus maximus, there is no doubt of its having been secondary to the retroflexion.

Professor Macalister, remarking on the case, says: "There is no period of embryonic existence in which any condition like this is foreshadowed, but there is this interest in it, that the fore-limb homologue of the gluteus maximus (latissimus dorsi) is a spinal muscle, and its leg arrangement as an iliac muscle is a secondary formation. They are both parts of a primitive superficial sheet of muscle stretching back from the somatopleura over the dorsal muscle, and in this case the sheet has become displaced in consequence of the flexion."

In conclusion, it may be said that at the Royal College of Surgeons there is no specimen showing such a degree of retroflexion.

Special thanks are due to Mr. Pooley for help in dissection, and to Dr. Gouldsmith and Mr. Whistler for the drawing and photographs which illustrate the paper.

Dr. Arthur Giles said there was one point in the remarks at the end of Dr. Remfry's paper that seemed to invite a difference of opinion, namely his explanation of retroflexion as due to the failure of development of the spinal column. Was not this deficiency in the spinal column rather the result than the cause of the retroflexion? Dr. Remfry explained the differences in position of the retroflexion as being produced by the different situations of the vertebral malformation. Dr. Giles suggested that the cause of retroflexion was probably in all cases the close attachment of the fœtus to the placental surface. The position in the uterus would determine the point of the fœtus where the greatest curvature was found; for example, if the attachment were in the middle of the long axis of the uterus, the upper and lower parts of the fœtus would be fairly uniformly bent back, and the retroflexion would be most marked in the dorsal region. If the attachment were higher up, near the fundus of the uterus, the head would be the part chiefly affected, and such an extreme condition as Dr. Remfry's specimen exhibited might be produced. Primary curvature or deficiency of the spinal column could probably not be produced except by disease of the vertebræ

or their joints, and as far as he knew such disease had not been found in these cases. On the supposition that the deficiency in the spine was secondary to the retroflexion, and that this in turn depended on the position of the fœtus *in utero*, a uniform explanation of the condition was obtained.

Dr. Amand Routh thought the cause of the retroflexion here was the extreme shortness (two inches) of the cord, and this explained the fact that the retroflexion was at the junction of the cervical and dorsal regions. If the cause had been the more common one of the weight of extroverted abdominal viscera, the flexion would have been lumbo-dorsal, owing to the viscera dragging on the spinal column below the diaphragm. He wished to know the reasons why it was thought that the insertion of the gluteus maximus into the left occipital bone was *secondary* to the retroflexion. He thought Dr. Remfry was right, because the lateroflexion was so slight, but he might have other reasons for his belief.

The President said that Dr. Remfry's paper was an excellent example of the use that should be made of malformed fœtuses. Dr. Remfry had placed before them a careful dissection of the specimen, and an account of what was known of similar specimens. He (the President) found no difficulty in understanding how a very slight cause might produce extreme retroflexion of the fœtus. The limitation of space in the uterus would lead to pressure on the two ends of the fœtus. Normally this pressure favoured flexion, but if the fœtus from any cause became so far extended that the occipito-spinal, or any spinal joint, became in front of the line along which the pressure on the two ends of the fœtus was exerted, then this pressure would tend to more and more retroflex, that is extend, the fœtus. In face presentation, which was often produced by slight causes, the extension was far greater than was ever seen in children after birth. Dr. Remfry's specimen was in the attitude of a fœtus presenting with the face. He agreed with Dr. Remfry that lateral flexion was present in his specimen.

In reply, Dr. Remfry considered that Dr. Giles's theory that certain situations of cord and placenta might produce retroflexion was ingenious, but not very probable. Dr. Amand Routh's question as to why it was thought that the insertion of the gluteus maximus was secondary to the retroflexion was a very difficult one to answer, but the author had been entirely guided by Prof. Macalister, who said that the fore-limb homologue of the gluteus maximus (latissimus dorsi) was a spinal muscle, and its leg arrangement as an iliac muscle was a secondary formation. They were both parts of a primitive sheet of muscle, which in this case had become displaced in consequence of the flexion.

TEMPERATURE IMMEDIATELY AFTER DELIVERY IN RELATION TO THE DURATION AND OTHER CHARACTERISTICS OF LABOUR.

By Arthur E. Giles, M.D., B.Sc., M.R.C.P.

(Received June 1st, 1894.)

(*Abstract.*)

The author has analysed six hundred cases of normal labour from the point of view of the relation of the temperature after delivery to the characters of the labour. He concludes:

1. The average rise of temperature due to labour is slight (average of six hundred cases, 98·7°: Tables I and II).

2. The length of the first stage of labour bears a slight relation to the subsequent temperature (Table I and Chart III).

3. The length of the second stage has a direct influence on the temperature, which rises in proportion to the length of this stage (Table III and Charts I and III).

4. The time of day at which delivery takes place has very little influence on the temperature; this is, however, highest in the groups of cases where delivery occurred between 12 and 4 a.m., and between 4 and 8 p.m. (Chart II).

5. When chloroform is given during the second stage of labour the temperature is commonly low after delivery, even if the second stage last long. The average temperature in fifteen cases with a second stage averaging two hours and forty minutes was 98·7°.

6. A similar result follows the application of forceps under chloroform; in twenty-six cases with a second stage lasting, on an average, three and a half hours, the average temperature was 98·8°.

7. In twelve cases of natural delivery in which the second

stage lasted, on an average, thirty-five minutes, but where an intra-uterine douche was given, the average temperature afterwards was 99·4°.

Having noticed incidentally that the temperature immediately after delivery was often higher after a long labour than after a short one, it seemed to me worth while to inquire if a constant relation existed. The necessary particulars were obtained from the case-books at the General Lying-in Hospital.

Observations on "puerperal temperatures" have been presented already to this Society, viz. by Mr. William Squire* and by Dr. E. S. Tait.† But these two communications deal mainly with the puerperium in general; whilst I propose to restrict my remarks to notes on the temperature immediately after delivery, *i. e.* within about half an hour of the delivery of the placenta.

I have analysed separately the temperature relations of the first and of the second stages of labour. For the first stage 300 cases were taken, and divided into seven groups according to the duration of this stage. The result is given in Table I, and in Chart III.

Table I.

Duration of 1st stage of labour.	4 hours or less.	4–8 hours	8–12 hours.	12–16 hours.	16–20 hours.	20–30 hours.	Over 30 hours.	Total.
No. of cases.....	50	60	60	50	30	40	20	310
Average temp. after delivery .	98·44°	98·6°	98·76°	98·77°	98·75°	98·87°	98·82°	98·70°

It will be seen from this table that the range of temperature is very slight, amounting to only $\frac{4}{10}$°, and probably it would be even less were it not for the fact that when the first stage is very short the second is usually short also.

* 'Obstet. Trans.,' vol. ix, for 1867, p. 129.

† Ibid., vol. xxvi, for 1884, p. 8.

And, as we shall see, the influence of the second stage is well marked.

The length of the first stage makes more impression on the temperature in those cases where the membranes rupture very early; when this is so, and the first stage lasts one or several days, the temperature is often high, even when the second stage is rapid. I have also noticed several times that a long first stage in multiparæ is associated with a high temperature. The following readings illustrate these two circumstances.

1. Temp.* 100·4°; membranes ruptured thirty hours previously; duration of second stage about thirty minutes.

2. Temp. 99·2°; membranes ruptured sixteen hours previously: duration of second stage thirty minutes.

3. Temp. 99·6°; membranes ruptured twenty-three hours previously; duration of second stage about ten minutes.

4. Second stage of labour fifteen minutes; temperature after delivery 100°; first stage twenty and a half hours. In a multipara.

5. Second stage of labour twenty-five minutes; temperature after delivery 100°; first stage thirty hours. In a 12-para.

In tracing the influence of the second stage of labour, I have analysed the records of 600 normal cases. Eight groups were made, according to the length of the second stage, viz.

1. 15 minutes or under.
2. 15—30 minutes.
3. 30—45 minutes.
4. 45 minutes to 1 hour.
5. 1 hour to 1½ hours.
6. 1½—2 hours.
7. 2—3 hours.
8. 3 hours or more.

In each group the number of cases was recorded at each degree of temperature, as in Table II.

* Throughout this paper "temperature" means "temperature immediately after delivery."

Table II.

Duration of 2nd stage.	15 min.	30 min.	45 min.	1 hour.	1½ hours.	2 hours.	3 hours.	Over 3 hours.	Total.
Temperature 97·0°	3	2	...	3	...	...	...	...	8
97·2	3	1	1	1	...	...	...	...	6
97·4	3	3	...	...	...	...	...	...	6
97·6	4	8	1	1	1	...	...	...	15
97·8	5	4	1	2	2	...	...	...	14
98	20	21	8	2	8	...	1	4	64
98·2	14	8	6	3	5	...	2	...	38
98·4	24	32	7	8	7	5	...	2	85
98·6	20	24	15	5	5	3	2	3	77
98·8	19	18	4	3	4	3	1	3	55
99	22	15	14	5	6	4	3	5	74
99·2	6	7	6	8	4	3	4	9	47
99·4	6	5	6	5	8	2	2	2	36
99·6	6	2	5	1	5	2	4	2	27
99·8	...	3	3	1	1	1	1	3	13
100	...	2	2	2	3	2	1	7	19
100·2	...	...	...	2	3	...	...	1	6
100·4	...	...	1	...	1	...	...	1	3
100·6	...	...	1	...	...	1	2	1	5
Total	155	155	81	52	63	26	23	43	598
Average temp. ...	98·5°	98·5°	99°	98·7°	98·8°	99·1°	99·2°	99·2°	98·7°

It will make this table clearer to condense it, as in the following table. (Percentages in italics.)

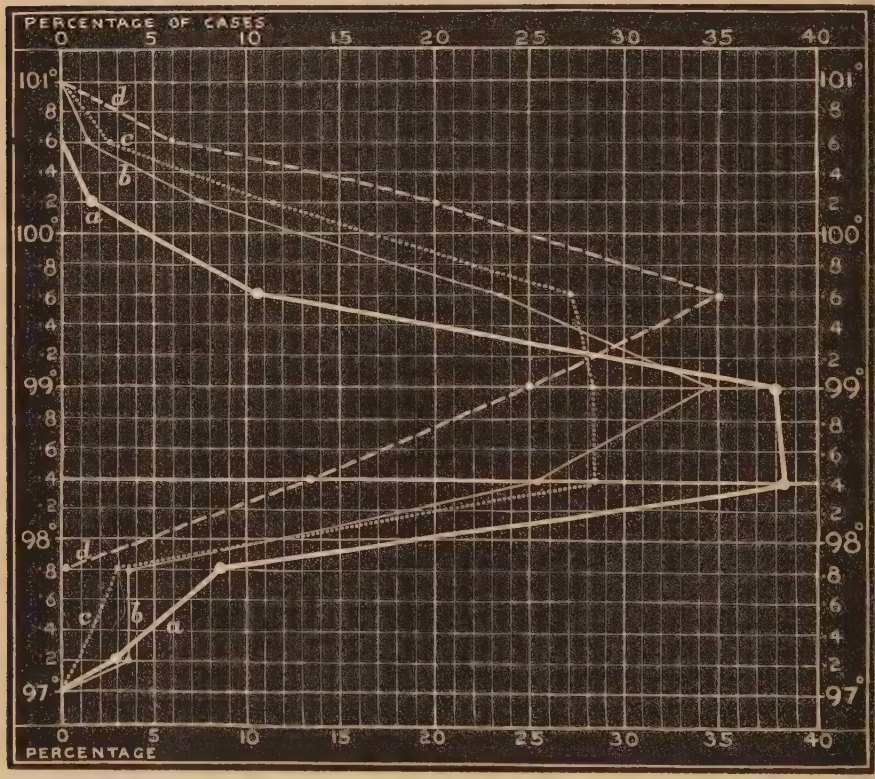
Table III.

Duration of 2nd stage.	30 min. or less.		30 to 60 min.		1 to 2 hours.		Over 2 hours.	
Temperature 97·2° ...	9	*3*	5	*3·7*	...		...	
97·8 ...	27	*8·6*	5	*3·7*	3	*3·3*	...	
98·4 ...	119	*38·4*	34	*25·6*	25	*28·1*	9	*13·5*
99 ...	118	*38*	46	*34·6*	25	*28·1*	17	*25·5*
99·6 ...	32	*10·4*	31	*23·4*	24	*27·1*	23	*35*
100·2 ...	5	*1·6*	10	*7·5*	10	*11·2*	13	*20*
100·6 ...	...		2	*1·5*	2	*2·2*	4	*6*
Total	310	*100*	133	*100*	89	*100*	66	*100*
Average temperature* ...	98·5°		98·8°		98·9°		99·2°	

* These averages are calculated from Table II; if calculated from

From Table III is constructed the accompanying Chart (I), which shows the same facts in graphic form.

Chart I.



A chart to show the prevalent ranges of temperature after labours of different duration.

Curve *a*, heavy line.—Duration of 2nd stage of labour 30 minutes or less.
Curve *b*, fine line.—Duration of 2nd stage of labour 30 to 60 minutes.
Curve *c*, dotted line.—Duration of 2nd stage of labour 1 to 2 hours.
Curve *d*, interrupted line.—Duration of 2nd stage of labour over 2 hours.
The vertical lines show the percentage of cases in each group at the corresponding temperature.

Table III they are higher: *e.g.* cases at 98·6° and 98·8° would be merged in those at 99°; the averages in the four groups would then be 98·7°, 98·9°, 99·1°, and 99·6°.

It is thus clear that the duration of the second stage of labour has a definite influence, as a rule, on the temperature after delivery.

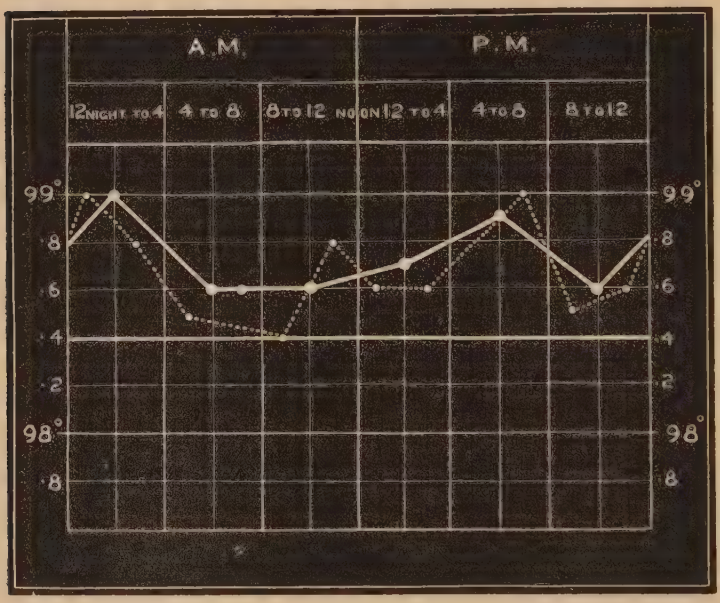
Another factor has a slight influence, viz. the time of day at which delivery takes place. Shroeder states:* "Independent of the processes which immediately after labour cause a temporary rise of temperature to above 39° C., it is chiefly the time of day at which delivery has taken place which determines the height of the temperature. Its greatest rise takes place when the woman has been delivered in the course of the forenoon, because the normal daily and evening exacerbation then falls within the first twelve hours of the puerperal state. The succeeding decrease is very considerable when delivery occurs in the first hours of the morning." To trace the effect of this factor on the temperature just after delivery, under conditions as similar as possible, I analysed 300 cases of multiparæ in which the second stage of labour lasted less than an hour, dividing the twenty-four hours into periods of four hours each; 50 cases were taken of delivery within each period. The average temperature of each group of 50 cases is given in Chart II. From this it appears that the highest average temperature occurred among the cases of delivery between midnight and 4 a.m.; the average of those occurring between 4 and 8 p.m. was nearly as high. But the whole range of temperatures was very small, viz.

12 midnight to 4 a.m.	99°
4 a.m. to 8 a.m.	98·6°
8 a.m. to 12 noon	98·6°
12 noon to 4 p.m.	98·7°
4 p.m. to 8 p.m.	98·9°
8 p.m. to 12 midnight	98·6°

The influence of this factor is therefore slight.

* Schroeder, 'Manual of Midwifery,' English translation, London, 1873, p. 99.

CHART II.



A chart to show the relation of the temperature after delivery to the time of day at which delivery occurs.

The continuous line represents a four-hourly grouping of cases; the dotted line a two-hourly.

It will be seen from Tables I and II that the average temperature of all the 600 cases was 98·7°; the average rise is therefore not considerable. The number and percentage of cases at different temperatures is given in Table IV.

TABLE IV.

Temperature after delivery.	No.	Percentage.
98·4° or below	236	*39·4*
98·4° to 99°	206	*34·4*
99° to 100°	142	*23·7*
Over 100	14	*2·5*
Total	598	*100*

Thus nearly 40 per cent. have a temperature at or below normal; about one third rise to 99°; nearly a quarter rise to 100°; and only 2·5 per cent. go above 100°.

The temperature after artificial or complicated delivery.—When chloroform is given the temperature after delivery is not usually high, even when the second stage of labour has lasted a considerable time. In 15 cases of primiparæ where chloroform was given to relax the passages and relieve pain, but where delivery occurred without instruments, the duration of the second stage and the temperatures after delivery were as follows:

No.	2nd stage.	Temp.	No.	2nd stage.	Temp.
1	1 hour	98°	9	3 hours	98·2°
2	1 „	98·8	10	3 „	98·4
3	1 h. 5 m.	98·6	11	3½ „	99
4	1¼ hours	98·8	12	4 „	98·4
5	1½ „	99	13	4½ „	98·4
6	2 „	98·2	14	5½ „	99·2
7	2¼ „	99·8	15	5½ „	99·6
8	2½ „	98·6			

Or, 15 cases with an average duration of 2 hours 40 minutes, second stage, had an average temperature of 98·7° after delivery.

Similarly, when the forceps are applied under chloroform, after the second stage of labour has gone on a long time, the temperature is very seldom high; this is shown by the following 26 cases.

No.	Duration, 2nd stage.	Temp.	No.	Duration, 2nd stage.	Temp.
1	1 hour	98°	14	3¾ hours	98·8°
2	1 „	98	15	3¾ „	99·2
3	1 „	98·4	16	3¾ „	99·6
4	1½ hours	98	17	4 „	98·4
5	1½ „	99	18	4 „	99·2
6	2 „	97·4	19	4 „	100
7	2 „	99·2	20	4¼ „	99
8	2½ „	99·4	21	5 „	98
9	3 „	99·4	22	5 „	99
10	3 „	101	23	5½ „	98
11	3¼ „	98	24	6 „	98·4
12	3¼ „	98·8	25	7¾ „	98·8
13	3½ „	99	26	8 „	98·4

Or, 26 cases with a second stage averaging 3½ hours had an average temperature after delivery of 98·8°.

In 2 cases of craniotomy, performed under chloroform, the temperatures were 98·2° and 99°, the second stage having lasted 1 hour 10 minutes, and 4 hours respectively.

In 4 cases of version under chloroform for contracted pelvis, the second stage having lasted 1 to 1½ hours, the temperatures were 97·4°, 97·6°, 98·8°, 99·8°—an average of 98·4°.

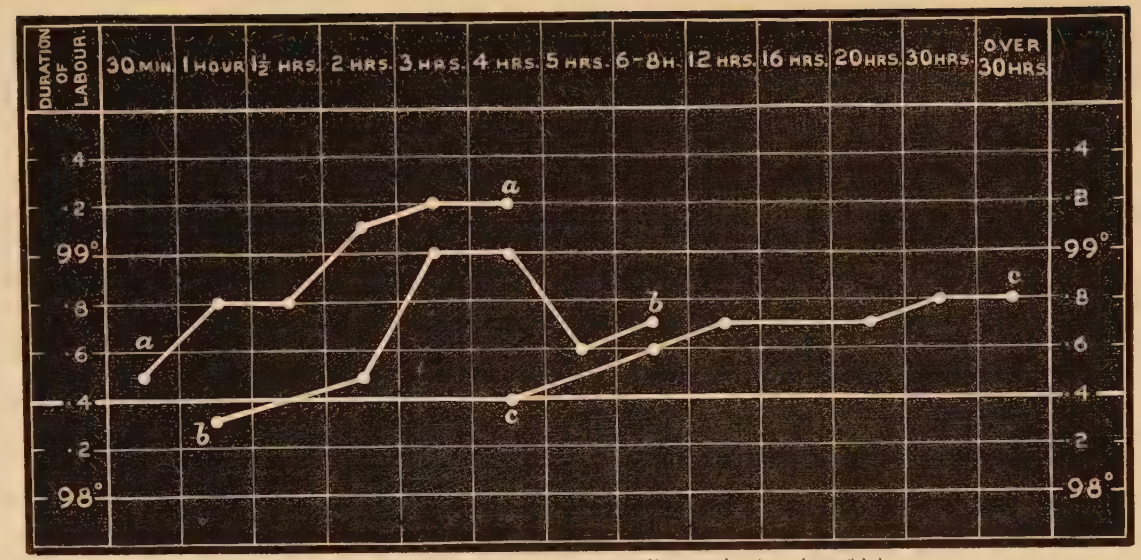
On the other hand, after an intra-uterine douche the temperature was almost always raised. I have notes of 12 cases in which delivery took place naturally, but an intra-uterine douche was required, either after the birth of a macerated fœtus or after exploration for adherent placenta or membranes. They are as follows:

No.	Duration, 2nd stage.	Temp.	Indication for intra-uterine douche.
1	15 min.	99·4°	Adherent placenta.
2	15 „	98·6	„
3	15 „	99·4	Retained chorion.
4	15 „	100	Adherent placenta.
5	20 „	99·8	„
6	20 „	100·2	„
7	20 „	99·4	Macerated fœtus.
8	40 „	99·2	Retained chorion.
9	45 „	97	„
10	65 „	100·4	Macerated fœtus; adherent placenta.
11	1½ hours	99·2	Macerated fœtus.
12	1½ „	100	Adherent placenta.

Thus these 12 cases, with a second stage averaging 35 minutes in duration, had an average temperature after the intra-uterine douche of 99·4°.

For convenient comparison of the influence upon temperature of (*a*) the duration of a natural second stage; (*b*) the duration of the second stage, under chloroform; and (*c*) the duration of the first stage, Chart III has been constructed. The curve *a a* is obtained from Tables II and III, the curve *c c* from Table I, and the curve *b b*

Chart III.



Showing the variations of temperature according to the duration of labour.

a a. The average temperature in relation to the length of a natural second stage.
b b. The average temperature in relation to the length of a second stage when chloroform is given.
c c. The average temperature in relation to the length of the first stage of labour.

from the above given series of temperatures with chloroform, whether or not forceps were also used.

The facts before us confirm the general opinion that in the first stage of labour, with unruptured membranes, delay causes no bad symptoms except such as may result from the tedious pain; whilst in the second stage, delay causes rise of temperature and all its associated symptoms.

The influence of chloroform is striking, and its action, so far as the temperature is concerned, is beneficial. It probably operates in two ways: firstly, by quieting emotional disturbance; secondly, by suspending, wholly or in part, the action of the voluntary muscles associated with parturition.

The rise of temperature after the intra-uterine douche is to be attributed, partly to the mental disquietude of the patient which is caused when no anæsthetic has been used and the uterus has been explored, and partly, in all probability, to the direct transmission of heat to internal parts.

Dr. CULLINGWORTH said that Dr. Giles's paper, though extremely valuable and interesting, was not one that lent itself to discussion. He would like, however, to suggest that the title should be slightly altered. The paper dealt with the lying-in woman's temperature, not only in relation to the duration of labour, but to other conditions. He would therefore suggest that the words "duration of labour" should read "duration and other characters of labour." He was glad to notice that the use of chloroform had not been found to exercise any prejudicial influence upon the post-partum temperature. It had already been cleared from the imputation of increasing the liability to post-partum hæmorrhage, and now it had successfully passed through another ordeal.

The PRESIDENT said that in this carefully written paper, which must have involved much labour, Dr. Giles had broken new ground. Abundance of observations were on record showing the conditions on which the grave febrile illnesses of the puerperal state depended. This paper was the first attempt he knew of to reduce to law the minor temperature variations of normal lying-in. These variations, although they might be in the present state of knowledge unimportant,

because not leading to inferences useful in the management of the case, yet could not be fortuitous; and work such as Dr. Giles's, showing us the causes on which such variations depend, could not fail to be ultimately of practical use. As no one that he knew of had made any similar investigation, they were hardly able at present to criticise Dr. Giles's work.

ON THE CHANGE IN SIZE OF THE CERVICAL CANAL DURING MENSTRUATION.

By G. Ernest Herman, M.B.Lond., F.R.C.P.,

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(Received June 19th, 1894.)

(*Abstract.*)

The author refers to the different opinions that have been expressed as to the state of the uterine canal during menstruation, some saying that the canal is made smaller by swelling of its mucous membrane; others that it dilates; but all of them opinions based mostly on theory, and little on observation. He details measurements, made to ascertain what change really occurs in the cervical canal during menstruation. He comes to the following conclusions:

1. That slight spontaneous dilatation of the cervical canal takes place during menstruation.

2. That this dilatation is at its maximum on the third and fourth days of menstruation.

3. That this dilatation takes place in those who menstruate with pain as well as in those who menstruate without, in those who menstruate scantily as well as in those who menstruate copiously; and there is no marked concomitant variation between the amount of dilatation and the amount of pain or the amount of the flow.

Statements are to be found in gynæcological literature about the condition of the cervical canal during menstruation. Some have said that painful menstruation is due to smallness of the canal, and that the canal is smaller during menstruation because its mucous membrane swells and

blocks it up. Others have said that the canal dilates during menstruation. Most assertions either way are based on theory, not on observation. The only author that I can find whose statement is more than an opinion is Dr. Burton, of Liverpool.* He passed the sound in six subjects while they were menstruating. He found that it went in easily, and he thought that it passed more easily than in most women who were not menstruating. Dr. Burton's observations at least show that the cervical canal was in his cases not appreciably smaller than in women not menstruating. The correctness of Dr. Burton's opinion that it was larger depends upon the delicacy and trustworthiness of his muscular sense of the resistance overcome, and his discrimination of the cause of that resistance.

I have tried to find out by a more definite method whether the size of the canal alters, and how much it alters. The method I have adopted is that of passing bougies into the cervical canal, beginning by trying to pass a larger one than I expected the canal would admit, and then using smaller and smaller ones, until a size was reached which would pass the canal.

Information as to the size of the cervical canal cannot be got by beginning with a small bougie and then passing larger and larger ones, because the passage of each bougie dilates the canal, and therefore the result of this proceeding only shows the dilatability of the canal, and not its size. I found that even passing the one bougie which gave information as to the size of the cervical canal dilated it so that on the following day a larger bougie could be passed; and this reason alone made it impossible to watch the change in size of the cervical canal from day to day in the same patient.

I submit conclusions based on observations in thirty-four women. In each case the canal was measured in the way described, while the patient was menstruating, and also at a time when she was not menstruating; in thirty cases

* 'British Medical Journal,' 1884, vol. ii, p. 607.

before the menstruation during which the canal was measured, in four cases after it, in eight both before and after. Most of the observations I made myself, but some were made for me by gentlemen acting at the time as Resident Accoucheur in the London Hospital. The observations on each patient were, with two exceptions, always made by the same observer, lest the difference in the amount of force used by different persons in passing the bougie should make the result incorrect. The names of the gentlemen to whom I am indebted for this assistance are shown in the table; they are Mr. Walter Blaxland, F.R.C.S.Eng., now of Sydney, New South Wales; Mr. Percy Vaughan Jackson, now surgeon in Her Majesty's Navy; Mr. G. C. W. Wright, now Assistant Surgeon, General Post Office; Dr. H. G. Lys, M.D.Lond., now of Bournemouth; and Mr. Wm. Penberthy, now Assistant Medical Officer, Borough Asylum, Mapperly Hill, Nottingham.

Of the thirty-four patients, eleven had had children, one had had an abortion, twenty-two had never been pregnant.

The size of the cervical canal when the patient was not menstruating is shown in the following table. In those measured both before and after menstruation, the measurement before menstruation was in the cases in which the two differed, the smaller of the two, and is the one taken in the table.

No. of bougie.	Total patients.	Had been pregnant.	Never pregnant.
5	1	—	1
6	2	—	2
7	6	4	2
8	10	3	7
9	6	1	5
10	5	4	1
11	3	—	3
12	1	1	—

It will be seen that bougies 7, 8, and 9 represent the usual size of the canal; and that in this, parity does not seem to make much difference.

In some cases the cervical canal was measured twice during a menstruation. The interval between the measurements was either two or three days.

I now summarise the measurements during menstruation as compared with those taken before its commencement or after its cessation.

In 13 cases the cervical canal was measured on the *first* day of menstruation. In 2 its size was unchanged; in 11 it was larger. Of the 11, in 4 a bougie one size larger passed; in 6 a bougie two sizes larger passed; in 1 a bougie three sizes larger passed.

In 12 the cervical canal was measured on the *second* day of menstruation. In 1 its size was unchanged; in 11 it was larger. Of the 11, in 3 a bougie one size larger passed; in 5 a bougie two sizes larger passed; in 1 a bougie three sizes larger passed; in 1 a bougie four sizes larger passed; in 1 a bougie five sizes larger passed.

In 12 the cervical canal was measured on the *third* day of menstruation. In all it was enlarged. In 2 a bougie one size larger passed; in 8 a bougie two sizes larger passed; in 2 a bougie three sizes larger passed.

In 6 the cervical canal was measured on the *fourth* day of menstruation. In 1 its size was unaltered; in 5 it was enlarged. In 2 a bougie one size larger passed; in 1 a bougie two sizes larger passed; in 2 a bougie three sizes larger passed.

In 8 the cervical canal was measured on the *fifth* day of menstruation. In all it was enlarged. In 4 a bougie one size larger passed; in 4 a bougie two sizes larger passed.

In 5 the cervical canal was measured on the *sixth* day of menstruation. In 1 its size was unchanged; in 4 a bougie one size larger passed.

The broad result of this investigation is, that in every case the cervical canal was larger during menstruation than in the interval; in other words, that it spontaneously dilated. The dilatation seems to have been greatest on the third and fourth days of menstruation, but the

number of observations is too small to enable me to assert that this is the rule.

Some measurements made during the intermenstrual period showed that sometimes the cervix dilates although the patient is not menstruating. In one case (No. 26) eleven days before menstruation No. 11 bougie could be passed, but it subsequently contracted so that only No. 6 would pass. In another case (No. 11) the cervical canal was found enlarged two weeks before menstruation, and subsequently became swollen again. In two cases (Nos. 4 and 9) the cervical canal had been dilated more than a month previously for dysmenorrhœa; and the large size of the canal in these cases goes to show that the mechanical effect of dilatation in enlarging the canal does not quickly pass off.

It would be interesting and instructive to know the causes upon which variations in the size of the cervical canal of the unimpregnated uterus depend; but the elucidation of this question would need an enormous number of manipulations not beneficial but very disagreeable to the patients, so that such an extension of this investigation seems to me impracticable.

The mechanical theories that have been so widely accepted as to the nature of dysmenorrhœa suggest the question,—Does the amount of menstrual pain bear any relation to the size of the cervical canal?

Eighteen menstruations were observed during which the patients complained of much pain.

The maximum size observed during these menstruations was the following:—No. 7 bougie in one case; No. 8, one case; No. 9, two cases; No. 10, seven cases; No. 11, four cases; No. 12, two cases; No. 13, one case.

Fourteen of the menstruations observed were painless. The maximum size of the cervical canal observed in these cases was the following:—No. 7 bougie in one case; No. 8, one case; No. 10, four cases; No. 11, one case; No. 12, two cases; No. 13, two cases; No. 14, two cases; No. 15, one case.

It will be seen that although in some of those who menstruated without pain the cervical canal was larger than in any of those whose menstruation was accompanied with pain, yet there is no such great difference between the size of the canal in the two sets of cases as should be the case if the mechanical theory of dysmenorrhœa were the correct explanation of a large proportion of cases.

One more question suggests itself. Is the size of the canal in relation to the quantity of the flow?

Some of the patients said the flow was moderate in amount, others copious, others scanty. Taking the extreme cases, I find eight in which the flow was said to be copious. In these the maximum size of the cervical canal was the following:—No. 8 bougie in one case; No 10, two cases; No. 11, two cases; No. 12, one case; No. 13, one case; No. 15, one case.

In eleven the flow was said to be scanty. In these the maximum size of the cervical canal was No. 8 bougie in two cases; No. 10, five cases; No. 11, two cases; No. 12, one case; No. 13, one case.

It is clear from these figures that the difference between the size of the cervical canal in those who menstruated copiously and those who menstruated scantily is not so marked as it would be if the expansion were simply proportionate to the amount of the flow.

Summary.—The measurements detailed in this paper show—

1. That spontaneous dilatation of the cervical canal, slight in degree, takes place during menstruation.

2. That this dilatation is at its maximum on the third and fourth days of menstruation.

3. That this dilatation takes place in those who menstruate with pain as well as in those who menstruate without pain, and in those who menstruate scantily as well as in those who menstruate copiously. The measurements show no marked concomitant variation between the amount of dilatation and the amount of the pain or the amount of the flow.

No	Initials.	Age.	Observer.	Parity. Children.	Parity. Abortions.	Size before menstruation.	Size during menstruation on days— (× = menstruation ceased). 1	2	3	4	5	6	7	8	Size after menstruation.	Quantity.	Pain.	Disease for which admitted.
1	A. H.	34	Blaxland	7	0	10	...	11	...	13	...	11 ×	...	11	...	Moderate	None	Retroflexion; nervous exhaustion.
2	H. E.	48	„	1	0	...	...	...	14	...	14	×	...	12	12	„	Slight	Perimetritis.
3	E. B.	23	„	0	0	11	13	...	14	×	12	...	...	...	11	„	None	Cervix had been dilated and incised for dysmenorrhœa.
4	A. M.	20	„	0	0	11	13	...	...	×	13	...	...	12	...	Scanty	„	Debility.
5	A. W.	21	„	1	0	8	...	...	...	...	9	×	...	...	8	Moderate	Slight	Retroflexion.
	2nd measurement,		Herman	...	..	8	8	...	10	...	×	9	...	...	...	„	None	Pain relieved by rest.
6	C. P.	26	Jackson	0	1	9	11	...	...	...	×	8	...	...	...	„	„	Prolapsed and tender ovary.
7	A. S.	21	Blaxland	0	0	9	...	11	...	...	...	...	12 ×	...	12	Copious	„	Retroflexion; dysmenorrhœa, relieved by rest.
8	H. H.	24	„	0	0	7	...	...	...	7	×	...	...	...	6	Moderate	Much pain, neuralgic	Pyosalpinx removed on one side three months before.
9	C. P.	19	„	0	0	8	10	...	×	...	10	...	...	10	...	Scanty	Much pain	Dysmenorrhœa.
	2nd measurement,		„	...	...	...	15	...	...	...	×	...	14	...	...	Copious	No pain	After dilatation.
10	J. K.	18	„	1	0	10	..	11	×	...	11	...	...	...	..	Scanty	Slight pain	Salpingitis.
11	S. C.	27	Jackson	0	0	11	12	...	...	14	...	...	14 ×	...	...	Moderate	No pain	Vaginal cyst.
12	A. C.	27	„	4	0	10	...	10	...	...	...	...	×	...	11	Copious	Much pain	Ovarian pain.
13	S. B.	31	Herman	2	1	7	10	...	...	...	×	...	...	...	...	Moderate	No pain	Dysmenorrhœa, relieved by rest and depletion.

14	H. M.	34	„	2	0	8	...	...	10	...	9 ×	...	...	...	...	„	„	Pruritus.
15	E. H.	35	„	5	1	7	...	...	8	...	×	6	...	...	...	Scanty	Slight pain	Retroflexion.
16	A. R.	18	„	0	0	8	...	...	10 ×	...	...	8	...	...	...	„	Much pain	Dysmenorrhœa.
17	L. F.	32	Jackson	0	0	...	11	...	...	11	...	×	10	...	...	Copious	„	Vaginitis.
	2nd measurement,		„	...	...	...	9	...	...	10	×	...	9	...	...	„	„	
	3rd „		„	...	..	10	11	...	13	...	×	...	...	...	...	„	„	
18	A. P.	24	Herman	0	0	8	9	...	...	...	...	×	...	...	...	Moderate	„	Salpingitis.
19	E. H.	24	„	1	0	7	9	...	...	...	...	×	10	...	...	„	Slight	Slight prolapse.
20	J. J.	23	„	0	0	8	...	...	10	...	×	9	...	...	...	„	Painful	Dysmenorrhœa, afterwards cured by dilatation.
21	A. P.	24	„	0	0	...	...	12	...	...	...	×	...	...	9	„	Much pain	Salpingitis.
22	L. T.	22	„	0	0	7	...	...	8	...	...	...	...	...	...	Copious	No pain	Perimetritis.
23	A. C.	24	„	0	0	...	...	11	...	...	...	...	×	...	9	„	Much pain	Pelvic neuralgia.
24	E. D.	27	„	0	0	...	...	11	...	×	9	...	...	...	...	Moderate	„	Dysmenorrhœa, cured by subsequent dilatation.
25	M. A. S.	26	Wright	0	0	8	...	12	...	...	×	9	...	...	...	Scanty	No pain	Urethral caruncle.
26	L. B.	31	Lys	0	0	6	...	11	...	...	...	...	×	...	7	Moderate	Much pain	Dysmenorrhœa.
27	E. D.	20	„	0	0	8	...	...	10	×	...	...	...	...	9	Scanty	„	Dysmenorrhœa.
28	M. A. W.	26	„	0	0	6	...	7	...	8 ×	...	...	...	...	...	„	„	Ovarian pain, probably alcoholic.
29	E. S.	22	Herman	0	0	8	...	10	...	×	...	...	...	...	10	„	No pain	Gonorrhœa.
30	A. R.	29	„	0	0	9	...	...	11	...	×	...	...	...	...	„	Much pain	Ovarian pain.
31	L. L.	39	„	1	0	10	...	...	...	...	12	...	...	×	...	Moderate	„	Membranous dysmenorrhœa.
32	N. D.	40	Penberthy	0	0	5	...	7	...	...	...	×	...	...	...	„	No pain	Ovarian pain, relieved by rest.
33	H. W.	34	„	3	1	7	9	...	...	...	...	...	...	...	...	„	Much pain	Moveable kidney; old perimetritis.
34	F. H. B.	30	„	1	0	8	...	...	10	×	...	...	...	...	...	Scanty	„	Salpingitis.

Dr. Cullingworth said that the President's paper, like that of Dr. Giles, was not of a kind to invite prolonged discussion. He was glad that this question had been investigated, and that some definite information on the subject had been obtained. One statement in the paper he had listened to with some surprise, viz. that the effects of artificial dilatation of the cervix were sufficiently lasting to vitiate any observations made on the following day. He would like to ask Dr. Herman upon how many observations this statement was based. The current impression was, he thought, that the effects of artificial dilatation of the unimpregnated uterus passed off much more quickly than this statement would seem to imply.

Dr. Arthur Giles asked whether the observations referred to the cervical canal only, or whether the bougies were passed through the internal os to the fundus. [The President signified that they were passed through the internal os.] The latter being the case, it was very suggestive that the maximum dilatation was on the third and fourth days. If Mr. Heape's account of menstruation in *Semnopithecus entellus* could be applied to human menstruation, the period of desquamation would correspond to Dr. Herman's period of greatest dilatation. The dilatation would then depend, partly at least, on anatomical conditions. The early dilatation on the first day was probably of a different kind, namely, functional, corresponding in miniature to the dilatation that occurred in the first stage of labour.

Dr. C. H. F. Routh.—After thanking Dr. Herman for his valuable paper, Dr. Routh ventured to say that while nothing so precise as what Dr. Herman had stated had been noted before, it was one of the first lessons that he had been taught in gynæcology that the uterus almost invariably dilated *during* menstruation. Advantage was taken of this fact in cases of dysmenorrhœa in which the os appeared closed, or was so small as not to admit the smallest probe under ordinary circumstances, to wait till a period came on, when the small os opened gradually, however little, and could be seen and dilated. Again, we were all conversant with those cases in which the dysmenorrhœa was so severe that if the patient was not helped she might writhe for hours in agony on the floor, and yet after some time the pain would abate, and the courses would flow with great relief of the pains. This was doubtless due to some *spasmodic action* in the uterine canal in many cases, sometimes to a *flexion* which had to be overcome, by the *vis a tergo*, of the catamenia, retained in the upper part of uterus. An anodyne or antispasmodic would sometimes relieve the pains at once. All this proved that some spasmodic action or a contraction of the canal of a neurotic character was often at first present, which had to be overcome,—analogous, he supposed, to what took place in the male urethra when a sound or catheter was passed, or during irritation of the

canal contracting forcibly on the sound, and being with difficulty withdrawn until the spasm had ceased. So we might explain the gradual dilatation of the uterine canal up to the second or fourth day, although preceded by a contraction. There was another probable source of this difficulty. We all knew that, like the breasts, the uterus enlarges prior to menstruation. It could be easily felt enlarged by a bimanual examination, and the same thing also occurred in fibroids. Now the uterus was, after all, a closed bag, and it could be understood how at first, by local congestion around the internal cavity, its tubular canal would be compressed at first and elongated as the uterus rose in the pelvis, and so be smaller at first but subsequently assume its normal length and width. Perhaps Dr. Herman could, either from his present facts observed or in the future, tell the Society whether the length of the uterine canal was increased as well as its width.

The PRESIDENT said that his measurements were of the cervical canal; but the os internum was the narrowest part of this. He could draw no distinction between the functional and the anatomical os uteri. Menstruation seemed to him like a miniature labour; as the cervix dilated in labour, so it did, but in much less degree, in menstruation. Dr. Routh's observation as to a pinhole os uteri admitting a sound during menstruation, but not at any other time, was valuable. He had not been able to find any publication to this effect. Dr. Routh's remarks as to the swelling of the uterus blocking up the canal, he thought illustrated the need for observations such as he had in this paper submitted to the Society.

OCTOBER 3RD, 1894.

G. ERNEST HERMAN, M.B., President, in the Chair.

Present—50 Fellows and 5 visitors.

Roland Danvers Brinton, B.A., M.D.Cantab.; Reginald T. H. Bodilly, L.R.C.P.Lond.; and W. C. Loos, L.R.C.P. Lond., were admitted Fellows of the Society.

Robert Kingdon Ellis, M.B., B.Ch.Oxon., was elected a Fellow of the Society.

The following gentlemen were proposed for election:— Walter Meent Borcherds, M.R.C.S. (Cape Colony); Arthur Mantell Daldy, M.D., B.S.Lond.; Thomas Vere Nicoll, L.R.C.P.Lond.; Adam William Thorburn Steer, M.R.C.S.; William Atkinson Stott, M.R.C.S.; Allen James Swallow, M.B., B.S.Durh.; John D. Williams, M.D.Edin., B.Sc.

INCOMPLETE TUBAL ABORTION.

By L. REMFRY, M.D.

DR. REMFRY showed a specimen of the above which he had removed from a woman aged twenty-eight.

It consisted of (1) the dilated tube, (2) part of the right broad ligament, and (3) the right ovary. The tube was about the size of a ripe banana, and at the time of operation was distended with blood-clot. The fimbriated

extremity was dilated to the size of a shilling, and was surrounded by fine processes, the remains of the fimbriæ. An incision had been made into the tube and exhibited a rounded mass—the tubal mole. Microscopical examination of this had shown chorionic villi.

The patient was admitted to the Great Northern Hospital on May 19th with the history that a fortnight before she had had an early miscarriage. (It was subsequently thought that this had been a decidual cast only.) She looked pale, and complained of pain in the right iliac fossa and lower part of abdomen. The temperature and pulse were normal. On examination, Douglas's pouch and the lower half of the pelvis were found filled with a rounded rather irregular soft resistance, which felt like blood-clot, while in the situation of the upper part of the right broad ligament was an elongated mass like a large sausage. The uterus appeared to be enlarged to about three times the usual size. The case was diagnosed as ruptured tubal gestation. After two or three days the pain subsided, the temperature remained normal, and the patient felt quite comfortable. Complete rest was ordered.

On June 7, *i. e.* about five weeks after the supposed miscarriage, the temperature rose to 101°, and continued at about the same height till June 15th. This appeared to indicate decomposition in either the hæmatocele or in the mass in the broad ligament. Fresh pain and tenderness in the right iliac fossa suggested some change in the latter.

After consultation Dr. Remfry opened the abdomen, removed the specimen shown, and after breaking down the adhesions surrounding the blood-clot thoroughly washed out the pelvis. A drainage-tube was left in for thirty-six hours. The temperature on the second day was 100°, and on the third day sank to normal, at which it remained during the convalescence of the patient, who made an uninterrupted recovery.

In answer to Dr. Cullingworth, Dr. Remfry stated that

apparently no decomposition had taken place in the hæmatocele, but that a few drops of pus were found in the blood-clot in the tube.

GESTATION IN A RUDIMENTARY HORN.

By L. Remfry, M.D.

Dr. Remfry exhibited a specimen of the above, together with coloured illustrations. It consisted of a thick-walled sac, showing at its left upper part in front the cut ends of the left round ligament and left Fallopian tube. Through an opening made into the tumour posteriorly, the facial portions of the skull of a fœtus about six months old were apparent. Lying transversely across the jaw were three small bones believed to be the femur, tibia, and fibula. The thickness of the wall of the sac at the site of the incision was about three-eighths of an inch.

The patient from whom the specimen was taken was aged about thirty, and came to the hospital complaining of an abdominal swelling and pelvic pain. The history and examination pointed conclusively to the tumour being a fibroid of the subperitoneal variety springing from the uterus. For this the patient was treated, and the tumour, if anything, slightly decreased in size. Treatment, however, did not alleviate the symptoms, and after some months it was decided to remove this so-called fibroid, owing to the extreme pain and discomfort produced by it. The operation was straightforward, the pedicle being no thicker than that of an ordinary ovarian cyst. On passing the hand down into the pelvis, the right portion of the uterus with its Fallopian tube and round ligament was felt curving towards the right side.

The patient did very well after the operation, and on

the seventh day the stitches were removed, and the wound seemed to be quite healed. On the eighth day, however, she had a violent fit of coughing, and after a time it was discovered that some coils of small intestine had escaped underneath the dressings. The gut was very red and dry. On opening the abdomen all the intestines except the escaped portion were perfectly healthy in appearance, as also was the stump. The peritoneal cavity was washed out with hot water, and all possible means were adopted to try and save the patient, but she never recovered the shock, and died next day.

As to the diagnosis, Dr. Remfry said that when there had been no history of amenorrhœa, or of any symptoms or signs of pregnancy, the nature of the tumour during life could not be determined. Such a tumour, as far as he could ascertain, had always been diagnosed as a fibroid. After operation, when fœtal remains were found, the question was simply between (*a*) extra-uterine gestation and (*b*) gestation in a uterine horn. In (*a*) the round ligament and Fallopian tube were on opposite sides of the tumour; in (*b*) on the same side.

In answer to Dr. William Duncan, Dr. Remfry said that he had not used strapping for the abdomen, and, in fact, did not do so as a rule.

CYSTIC SARCOMA OF OMENTUM SIMULATING OVARIAN TUMOUR—REMOVAL—RECOVERY.

By William Duncan, M.D.

Dr. Duncan showed this specimen; it was removed from a lady aged sixty-two, on July 22nd, 1894.

The patient consulted Dr. Duncan on account of pain and increase in the size of the abdomen for the last six months.

She is a multipara, and had the menopause sixteen years previously. The complexion is sallow, and a good deal of emaciation has taken place. On examination the abdomen was filled by a large irregular tumour, partly cystic and partly solid. *Per vaginam* nothing abnormal was detected.

On opening the abdomen the large cyst presented and was tapped, when about three quarts of dark blood escaped. The tumour was intimately adherent to the omentum, and on passing the fingers down into the pelvis the ovaries were both found healthy, but very much atrophied from age. The uterus was also healthy, perfectly smooth on the surface but somewhat enlarged. The tumour, which had no pelvic adhesions, was now removed by tying the omentum across with a good many silk ligatures. After removal of the tumour the abdomen was quite free from any growth, and it was evident that the tumour sprang from the omentum.

The patient made an uninterrupted recovery, and before returning home had gained flesh and felt perfectly well.

Note (December 12th, 1894).—The patient, now five months after operation, continues well.

Subjoined is the report on the specimen by Dr. Voelcker, Pathologist to the Middlesex Hospital.

Report on a tumour removed from the abdomen, July 22nd, 1894, by Dr. William Duncan.

The portion removed consists of a mass the size of a cocoa-nut. To one surface the omentum is adherent, and has been partially removed with the tumour.

The tumour can be divided into two portions, a larger cystic portion and a smaller solid lobulated portion.

The larger portion consists of a cyst six inches in diameter, to the outer part of which omentum is adherent on one aspect. The outer wall is roughened in parts

where adhesions have been, and is also thickened by some irregular patches of thickening in the cyst wall. In a few places the cyst wall is quite thin.

The omentum can be almost entirely stripped off the cyst wall.

The average thickness of the cyst wall is 1·5 mm.

The nodular thickenings on section are pale and fleshy-looking, rather soft, and into them, in places, hæmorrhage has occurred.

The inner wall of the cyst is in the main smooth, but it also shows some fleshy masses projecting slightly into the cavity of the cyst in discrete patches.

The cyst itself was filled with soft material resembling blood-clot, but on microscopic examination it was found to be composed of elongated spindle-cells, and of branched myxomatous cells, and also large round cells, in addition to blood-corpuscles.

The more solid portion of the tumour is lobulated ; the outer surface is smooth, though the omentum is adherent to some of it. Some of the lobulated portions are blood-stained, and these are soft.

On section the largest mass is solid, yellowish white, and lobulated. It shows numerous foci of hæmorrhage, and in the centre is a yellow granular débris. Teased portions of this pale mass show a structure similar to that found in the large cyst.

A portion of the solid growth was hardened in alcohol, embedded in celloidin, and sections were prepared. These showed the growth to be composed of spindle-cells, oat-shaped and oval cells arranged in bundles running in different directions. Portions of the growth show mucoid softening, and in others are considerable patches of hæmorrhage.

There was no evidence of any glandular structure.

The blood-vessels in the growth are numerous.

The growth thus presents the characters of a spindle and oval celled sarcoma, into a portion of which hæmorrhage has taken place forming a cyst.

I am unable to indicate the part in which the growth originated; most probably it was in the omentum.

ARTHUR FRANCIS VOELCKER.

DERMOID CYST OF RIGHT OVARY—TWISTED PEDICLE.

By WILLIAM DUNCAN, M.D.

DR. DUNCAN showed a large dermoid tumour of the right ovary, the pedicle of which, at the time of operation, was found to be tightly twisted three times from right to left; the tube and fimbriated extremity were enormously distended with œdema, and the cyst-wall had in its upper part become necrosed.

The patient from whom it was removed was a single girl aged twenty-one, who noticed her abdomen getting larger for about a year. She consulted Dr. Roberts at the Samaritan Hospital, who diagnosed an ovarian tumour. The hospital being closed, she was kept under observation, but acute symptoms set in with great abdominal pain, and Dr. Roberts asked Dr. Duncan to take her into the Middlesex Hospital. On admission the abdomen was greatly distended and extremely tender, so that no definite tumour could be made out. The temperature was 102·4°. Abdominal section was performed, and the patient made an uninterrupted recovery.

LARGE GANGRENOUS INTERSTITIAL MYOMA OF THE UTERUS.

By C. J. Cullingworth, M.D.

Dr. Cullingworth exhibited a uterus containing several interstitial myomata, removed by abdominal hysterectomy from a patient sixty-one years of age. The main tumour formed an abdominal swelling of the size, and somewhat of the shape of a pregnant uterus at term. It had been growing rapidly since Christmas last, in consequence, the patient believed, of a fall she had at that time; and, on section after removal, it was seen to be in a gangrenous condition throughout. It emitted an odour like that of stale fish, and was of a greyish-yellow colour. In its interior was a large irregular cavity with ragged walls, containing offensive fluid mixed with necrotic tissue. There was a group of smaller tumours, apparently of cervical origin, completely filling the pelvis. These did not show any evidence of necrotic change.

The patient had ceased to menstruate at the age of fifty. There had been no hæmorrhage since. There had been difficulty in micturition for two years, but no retention. Persistent vomiting with rapidly increasing debility had been present for three weeks previous to the patient's admission.

The abdominal portion of the tumour with the hypertrophied body of the uterus was first removed, and then the pelvic tumours were enucleated. There was very little bleeding. The stump was trimmed, and the peritoneal flaps united over it by a line of seventeen Lembert's sutures of silk.

The tumours weighed 24½ lbs.

The patient bore the operation remarkably well, and for two days gave promise of a good recovery. At the

end of that time, however, septic symptoms developed, and she died on the fifth day.

At the autopsy three to four ounces of highly offensive blood were found in the interior of the stump. There was evidence of adhesive peritonitis. The descending colon was collapsed; the small intestines were filled with fluid fæces. The cervical canal was elongated to a length of 4½ inches, was of extremely narrow calibre, and was sharply curved upon itself. It therefore had entirely failed to act in the usual manner—as a drain to the interior of the stump.

Dr. Cullingworth said he regretted not having in this case made an incision through the vaginal roof to afford an outlet for the blood effused into the interior of the stump. There was no tension, however, in that situation, or other evidence to show that there was an accumulation of blood there, or that the interior of the stump had become the seat of septic change.

The main interest of the case lay (1) in the occurrence of gangrene in a tumour which was wholly interstitial, and where there had been no possibility of accidental infection either from the introduction of a sound or from surgical interference of any kind; and (2) in the evidence it afforded that uterine myomata did not invariably cease to be a source of danger to life even long after the menopause.

The patient had been under the care of Dr. Cullingworth's predecessor, Dr. Gervis, in the year 1875, when the tumour is stated to have been the size of a cocoa-nut. It had therefore been known to exist for nearly twenty years.

Dr. Hayes certainly thought that intra-peritoneal treatment of the cervical stump would, sooner or later, become generally recognised as appropriate in hysterectomy for fibroid tumours. Some time ago he himself had brought forward in this Society a most successful case of this method, which at the moment was received with severe criticism. He was glad to find that Dr. Cullingworth now adopted it. He, however, in one particular strongly differed from Dr. Cullingworth. He thought

the peritoneal end of the stump should have the cervical opening closed, and as completely as possible. This was best done by dissecting out a portion round the opening, then closing it with catgut or fine silk sutures, and, if possible, stitching over the extremity a portion of the peritoneum. The vagina should be purified and stuffed with antiseptic gauze. He considered the drainage of the stump objectionable and dangerous.

Dr. Heywood Smith remarked on Dr. Hayes' observation that drainage through the cervical stump in subperitoneal hysterectomy was novel to him. In the cases related by Dr. Goffe, of New York, as well as those reported by him (Dr. Smith), the cervical canal proved a most useful and natural vent for the evacuation of purulent discharge that not unfrequently took place, in consequence, probably, of the pressure of the silk ligatures, and in some instances the ligatures were thrown off through the os uteri.

Dr. Cullingworth, in reply to the President, said that the tumours, so far as could be ascertained, were of the hard variety. He could not say whether there had been continuous growth ever since the menopause, but there had certainly been rapid increase in size during the present year. In answer to Dr. Lewers he stated that he had not drained the peritoneal cavity, as there had been no indication for so doing. He regarded a patulous cervical canal as a valuable outlet for any blood that might otherwise accumulate from oozing in the interior of the closed stump. He had now abandoned the extra-peritoneal treatment of the stump as a routine method, reserving it for exceptional cases only. The insignificance of the hæmorrhage during the operation was due to the uterine arteries having been tied as a preliminary.

FIBRO-CYSTIC TUMOUR OF THE UTERUS REMOVED BY ABDOMINAL SECTION.

By Arthur H. N. Lewers, M.D.

Dr. Lewers showed this specimen. The history of the case was as follows.

Miss S—, aged 45, was brought to see Dr. Lewers by Dr. Warren, of Enfield Highway, in December, 1893. The abdomen had been noticed to be enlarging for about

three years. Till two years ago patient had been regular every four weeks, and always lost very little. For the last two years she had not been regular. Latterly she had menstruated every fortnight, but the quantity lost each time had been very small. On examination there was found a thin-walled fluctuating swelling, reaching well above the umbilicus and rising out of the pelvis. The sound only passed two and a half inches. Dr. Lewers diagnosed the case as one of ovarian tumour. At the operation, however, after tapping and emptying the cyst (which was unilocular and contained a thin straw-coloured fluid) he found that both ovaries were normal, and that the tumour was uterine. The operation was undertaken at the patient's own house at Enfield Highway; fortunately Dr. Lewers had the serre-nœud and transfixion pins with him, and accordingly performed a supra-vaginal hysterectomy, fixing the pedicle externally in the lower angle of the wound. The pedicle so fixed was, of course, composed of uterine tissue, but Dr. Lewers did not see the cavity of the uterus at all, and believes that it was not opened. The parts removed were the cystic tumour and a portion of the fundus of the uterus. The ovaries were so situated that there was no need to interfere with them. The patient made an absolutely uneventful recovery, and there is no sinus at the lower angle of the wound, which is soundly healed throughout. The patient has been regular since the operation.

Dr. Lewers spoke of the difficulty of the diagnosis between an ovarian and a large thin-walled, fibro-cystic tumour of the uterus, such as that in this case. The only absolutely distinctive physical sign was to retrovert the uterus strongly with the sound, and to get the finger *per rectum* above the fundus uteri. Still this distinction failed when an ovarian tumour was adherent to the uterus, as occurred not very rarely. It appeared, therefore, that an absolute diagnosis must be sometimes impossible till the abdomen was opened. Another point in connection with this subject appeared to him of import-

ance. To all appearance this case was a perfectly simple one of ovarian tumour, promising that the operation would be an easy one and without complication. The event proved it to be far otherwise, and illustrated once more that no one was justified in undertaking ovariotomy who was not prepared to deal with unexpected complications.

TWO CASES OF PSEUDO-HERMAPHRODITISM.

By J. H. Targett, F.R.C.S.

(With Plates I, II, III.)

Case 1.—The following notes, with the accompanying photographs, of a case of supposed hermaphroditism were presented to the College of Surgeons by Mr. Gambier Bolton, F.Z.S., who saw and examined the individual when travelling in the United States. The notes were taken by Mr. Bolton. Being written by a layman, a few alterations and the substitution of more scientific terms were necessary, but with such exceptions the notes were entirely those of Mr. Bolton.

Pauline S—, aged 26 years, born at Lennox, Mass., on May 18th, 1867. The father is American, the mother English ; both normal. Their family consists of five children, three boys and two girls. All the children but this one are normal, are married, and have families.

General appearance.—Height five feet nine inches, hair light brown, complexion rather sallow, eyes brownish grey. The individual would pass as a strong, well-formed young woman. Voice rather masculine, but neither gruff nor high-pitched like that of a eunuch. Until nineteen years of age P. had an alto singing voice, but this was lost in consequence of a severe cold contracted at sea.

Physical examination.—Body well developed and well nourished. Arms and thighs like those of a finely grown

woman. Shoulders sloping, hips large and roomy, has a decided waist, and wears 20-inch corsets. Hands rather large, with strong fingers and well-shaped nails. Breasts and nipples small for her age, about the normal size of those of a girl at fifteen. During menstruation there are distinct sensations in the breasts at times, but with no sign of secretion.

The hair on the head is soft and fine in quality, and reaches nearly to the waist. In the axilla and upon the mons Veneris it is somewhat lighter in colour than that of the head. No sign of hair upon the face, arms, or legs, or around the nipples. The supra-pubic hair has the female outline, and does not extend up towards the umbilicus. The skin of the upper lip, chin, and cheeks is quite soft and smooth.

Genital organs.—The external organs apparently consist of a penis, scrotum, testes, and vulva. The penile organ is situated about two inches in front of the vulval opening; it is described as well and perfectly shaped, except that it is imperforate. It measures rather less than three inches in length when relaxed, but in a state of erection it is about five inches long. During erection the organ is bent downwards by a strong frænum beneath the glans (Plate I).

The so-called scrotum consists of two separate pouches, one on either side of the penile organ. The testes are described as being "set very high up and wide apart;" they are small, and each is contained in the corresponding scrotal pouch.

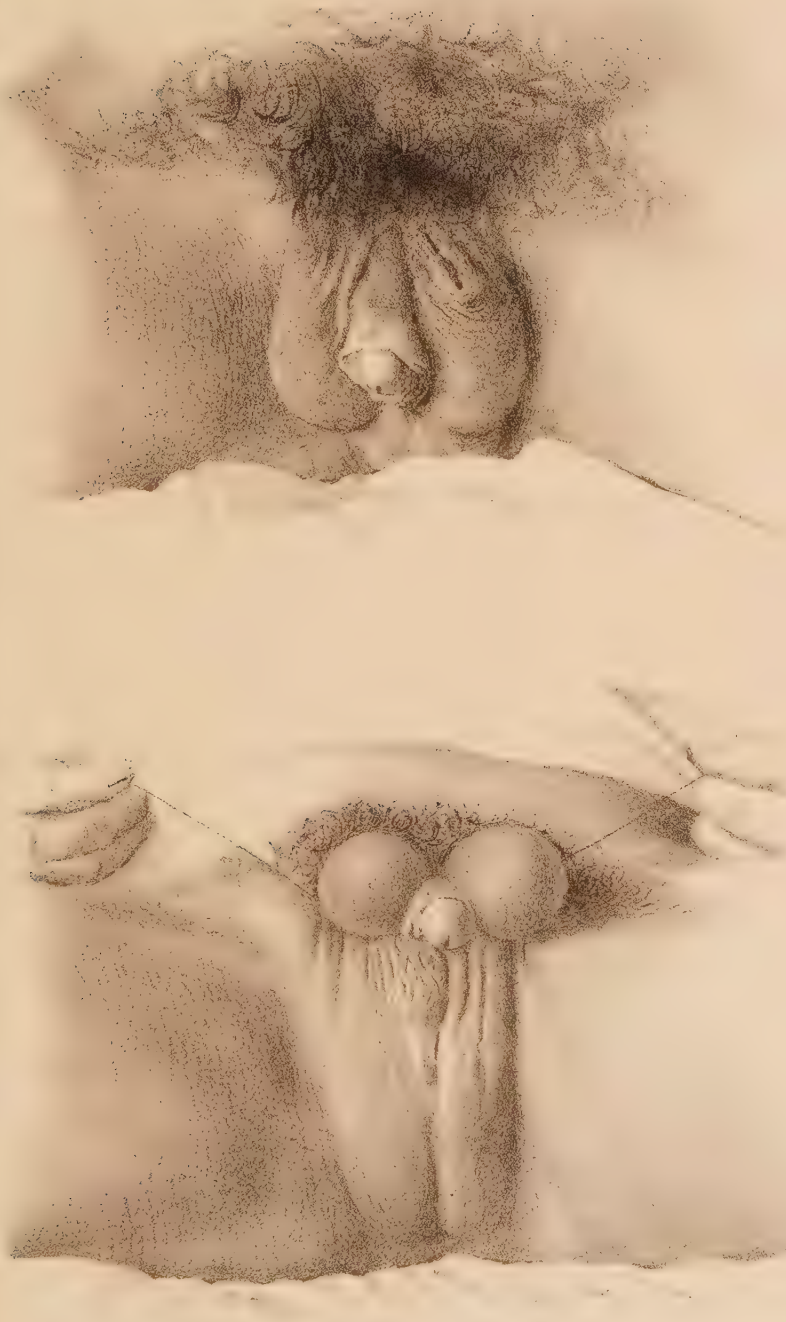
The vulval opening is placed just behind the penile organ and scrotal pouches. No mention is made of labia, but the accompanying photograph shows small folds of integument occupying the position of labia majora, and a wide interval corresponding with the perineal space. The orifice of the vagina is stated to be smaller than normal, and from the appearance of the parts it would seem to be impossible for copulation to take place with an average sized man. It is further stated that the

uterus, ovaries, and urethra have been recognised by careful examination at different medical colleges in America,—for example, the hospital at Albany in New York State.

Sexual history.—Pauline S— always dresses as a woman,—in fact, could not wear men's clothes on account of a menstrual discharge and the mode of passing urine. In riding on horseback always sits as a woman, and has performed as a female bare-back rider in circuses. On the other hand, the sexual inclinations are entirely towards women. P. lives with a young woman aged twenty-three, and they appear to be very fond of each other, and say that they derive great pleasure from sexual intercourse with each other. During copulation P. is conscious of an orgasm, and an emission occurs from the vulval opening which is composed of mucus, and shows no signs of spermatozoa. Menstruation takes place with considerable regularity from the vagina, and urine is passed in the normal female manner.

With regard to the sexual instincts, it should be added that P. has never tried to have intercourse with a man, because the opinion has been expressed that if pregnancy occurred it would be necessary to remove the child by an operation, which might prove fatal. Though not gaining a livelihood by exhibiting the deformity, P. was anything but shy and reserved; the character was decidedly masculine.

Remarks.—The female characters of this individual undoubtedly predominate, *e. g.* the shape of trunk and extremities, the sloping shoulders and decided waist, the distribution and character of hair, the occurrence of menstruation, the presence of vulva and vagina, and perhaps uterus. The male features are confined to the voice and sexual instincts, for the supposed testes might well be herniated ovaries, and the absence of spermatozoa supports this. Thus the condition is reduced to one of marked hypertrophy of the clitoris and hernia of the ovaries in association with altered sexual inclinations.



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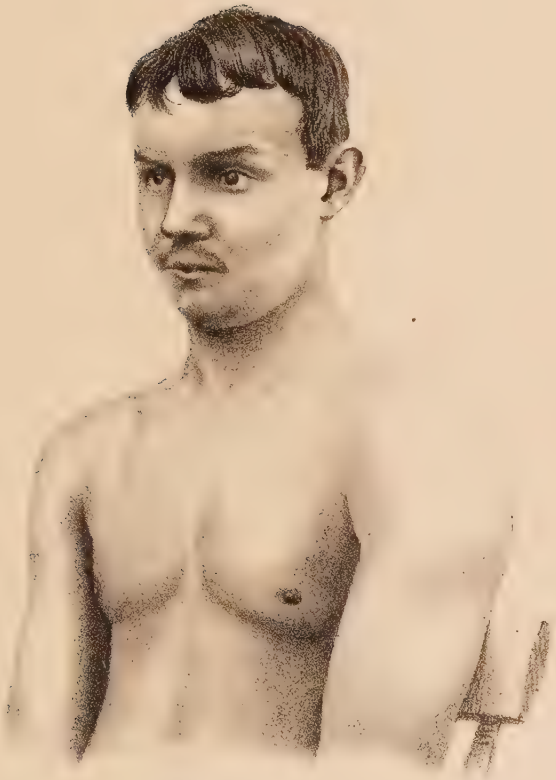

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Case 2.—The clinical notes and photographs of the following case were presented to the College of Surgeons by Mr. Davies-Colley, who has kindly allowed me to publish them with the preceding (Plates II and III).

Frederick ——, aged 17 years, a confectioner, came under observation in order that some operation might be performed upon his genital organs, which would relieve him from the necessity of passing his water through an opening in his perineum. When born he was thought to be a girl, and named Isabel. At the age of seven years he was examined by a medical man, and declared to be of the male sex. From that time he was given a masculine name, and was brought up as a boy. Of late he has been employed as a man with other men.

General appearance.—The patient is of low stature, about five feet high, and very muscular. The moustache is rather more developed than is usual with lads of his age. The mammary glands are those of a man. The genital organs were carefully examined, and presented the following characters :—The penis is about 2 inches in length, with a glans of the usual masculine form, and about an inch in transverse diameter. The organ is as free of the surrounding parts as usual in the male ; during erections it becomes concave downwards. Though the notch for the meatus is well marked there is no urethral aperture, but a distinct groove extends along the under surface of the organ, and terminates in an opening situated $3\frac{1}{2}$ inches from the tip of glans, and $1\frac{1}{8}$ inches in front of anus. There is no scrotum, but on either side of the penis there is a fulness resembling a labium majus, in which, on the right side, a moderately firm, tender, and moveable body about three-eighths of an inch in diameter may be felt. Occasionally a similar mass is present on the left side. There is nothing like a spermatic cord. The aperture situated at the bottom of the above-mentioned furrow is moistened with mucus, and when its edges are held apart two openings are seen. The posterior one permits the passage of a female catheter for $4\frac{1}{2}$ to 5 inches. With the

finger in the rectum this catheter can be felt to be separated by a partition of uniform thickness, about one-eighth of an inch. There is no prostate to be felt, but a small knot or thickening seems to terminate the passage. On withdrawal of the catheter a little blood and mucus appeared, but no urine ; when the catheter was introduced into the anterior opening some clear urine flowed. The last joint of the little finger can be inserted into the posterior passage without much difficulty, but causes pain. The entrance to the passage seems somewhat constricted by a membrane like the hymen. There has never been any discharge of blood as in menstruation, and the mother, who has several other children, says that the patient has always been like a boy in character and habits.

Remarks.—After careful examination the conclusion was arrived at, that while the general appearance and disposition of the patient were those of a male, his genital organs were those of an immature female, with the exception of the clitoris, which resembled the organ of a hypospadiac male. The right labial swelling was probably a hernia of the ovary. The patient was recommended to retain male attire and occupation unless any sign of menstruation appeared.

THREE CASES OF PELVIC INFLAMMATION ATTENDED WITH ABSCESS OF THE OVARY, WITH CLINICAL REMARKS.

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(*Abstract.*)

The author points out that the form of pelvic inflammation with which small suppurating cysts of the ovary and ovarian abscesses are usually associated is not pelvic cellulitis, but salpingitis, the ovarian suppuration being due to secondary infection. He briefly describes the course of events when salpingitis is attended with profuse suppuration, showing how the pus may either be confined in the Fallopian tube (by occlusion of the abdominal ostium), or (if the abdominal opening remain patulous) be discharged through that opening and form an intra-peritoneal abscess. He points out that although the usual seat of such an intra-peritoneal abscess is the pouch of Douglas, it may, in cases where the tube has been lifted out of the pelvis by the development of the pregnant uterus, form in a different situation,—for example, at the upper and lateral part of the pelvis, near the brim. He shows that wherever the intra-peritoneal abscess is formed it is usual to find the ovary constituting part of its wall. In this way the ovary is specially liable to secondary infection, the more so, probably, if it is already the seat of incipient cystic disease.

Three cases are related of abscess in the ovary due to secondary infection of this kind. In the first case two separate abscesses were found in the ovary, one at its outer end close to

the intra-peritoneal abscess, and one at its inner end some distance away. In the second case there were also two abscesses, but the mischief was more advanced, a communication having been opened up between the two abscesses by a process of ulceration. In the third case a still more advanced stage was seen, the ovary having ruptured and the contents of the abscess having escaped. The first two were puerperal cases, and in them the intra-peritoneal abscess, formed by the discharge of the contents of a suppurating Fallopian tube, was situated high up in the pelvis, close to the edge of the psoas muscle where it overhangs the pelvic brim. In each case the suppurating ovary formed part of the wall of the abscess. These two cases recovered, the third died.

The narration of the cases is followed by a few remarks on some of the modes of termination of ovarian abscess, and on the illusory character of a temporary subsidence of symptoms, with apparent restoration to health, in some of these cases of severe pelvic inflammation.

The paper concludes with a reference to eighty-three cases in which the author had performed abdominal section for non-cellulitic pelvic suppuration. An analysis of these cases shows that ovarian suppuration occurred in a large percentage, and that, next to purulent salpingitis, it is the most frequent form of non-cellulitic suppuration occurring within the female pelvis.

The following cases, all three of which happened to be under observation at the same time, and were operated upon within a few days of one another, illustrate in an unusually interesting manner some of the more remote, but at the same time the most serious dangers incurred in severe pelvic inflammation. The form of pelvic inflammation in which these risks are encountered is not that which primarily affects the pelvic connective tissue, but the more common form in which, starting from the endometrium, the inflammation spreads to the lining membrane of the Fallopian tubes, and through them reaches the pelvic peritoneum. If the inflammation is of a severe type, and is attended with profuse suppuration, one of several things may happen. The abdominal ostium of the Fallopian

tube may become quickly sealed up by the inflammatory process, and the pus may thus be confined within the closed tube, forming a pyosalpinx. If, on the other hand, the abdominal end of the tube remains open, the pus is discharged into the peritoneal cavity. In some cases the result is general suppurative peritonitis, but much more usually the pus finds itself limited by already formed peritonitic adhesions, and the result is an intra-peritoneal pelvic abscess. The locality of such an abscess depends on the position that the open end of the Fallopian tube happened to occupy at the time the discharge took place. When the outer end of the tube is lying in its usual position behind the broad ligament, with its mouth directed downwards, the abscess forms in the pouch of Douglas. But where the occurrence takes place at a time when the direction of the tube is other than the usual one—when, for example, the tube has been lifted above the plane of the pelvic brim during the development of the pregnant uterus, and is seized whilst in that elevated position by an attack of suppurative inflammation,—the abscess formed by the discharge of pus through its fimbriated end may be, and often is, situated not in Douglas's pouch, but near the lateral and posterior part of the pelvic brim, close to the edge of the psoas muscle. This is what happened in the first two of the cases here recorded, in both of which the original mischief followed parturition, and was septic in its character. In the third case, where the source of infection was probably an attack of gonorrhœa, the state of the parts at the time of the operation made it impossible to say whether such an abscess as now described had existed. If it had, it is certain that it was in Douglas's pouch, and not at the pelvic brim.

When the Fallopian tube has thus got rid of its purulent contents, the inflammation of its lining membrane gradually subsides, and when it comes to be examined at a later stage the inner surface of the thickened and elongated tube may show nothing more than a general softening and œdema. In the meantime the intra-peritoneal

abscess, closed in amongst adhesions, may remain for some time latent,—that is, it may produce few or no symptoms of presence. Sooner or later, however, its walls undergo ulceration, and its contents make their escape either into the bowel, or the vagina, or the peritoneal cavity, or the bladder, with results varying accordingly.

Meanwhile the infection may spread to contiguous parts, and especially to the ovary, which is almost invariably involved amongst the tissues and organs matted together by the peritonitis surrounding the purulent collection, whether that be in the tube or outside it. The three cases here recorded are examples of this secondary infection of the ovary. In all of them the ovary had become the seat of suppuration. In Case 1, two separate abscesses were found in the ovary, one at the outer end, close to the intra-peritoneal abscess, and one at the inner end, some distance away. In Case 2 there were also two abscesses, but in this instance the mischief had advanced further, and a communication had been opened up between the two ovarian abscesses by a process of ulceration. In Case 3 a still more advanced stage was seen, for here the ovary had ruptured, and the contents of the abscess had escaped.

Case 1.—A lady aged 35, the wife of an engineer residing in India, was admitted into St. Thomas's Home under my care, January 24th, 1894. She had been married eighteen months. Before marriage she had suffered for some time from pain in the right groin, thought to be due to a strain from lifting a chest of drawers. She had never had malarial or jungle fever. She was attended in her first and only confinement, which took place in India on August 12th, 1893, by a nurse-midwife, who took no special precautions as to cleanliness, and is not remembered to have been seen even to wash her hands. The doctor took no part in the delivery, and neither then nor subsequently made a single vaginal examination. The labour was normal. Two or three days afterwards

a rigor occurred, accompanied with a rise of temperature but with no pain. A second rigor occurred about two weeks later, and the patient was in bed a month with symptoms of fever. During the latter part of this time there were some pain and slight swelling in the left groin. The temperature did not become normal until the seventy-ninth day (beginning of twelfth week). It remained normal until the ninety-fifth day (middle of fourteenth week), when it again rose. She now had pleurisy ending in empyema, which was tapped and drained. On the 111th and 112th days (end of sixteenth week) she had a temperature of 105°, preceded by shivering and accompanied with vomiting, and what was called bilious fever. After this she remained in India another three weeks, and on December 27th, 1893, she embarked for England. Whilst on board ship she had pain and swelling in the right iliac region with pyrexia, and for three days before reaching Naples the pain had been so severe that she landed at Naples with a view to taking medical advice as to the propriety of continuing her journey. Dr. Gairdner advised her to do so. She followed his advice, and on reaching England was admitted into St. Thomas's Home.

The note made on her admission describes her as a light-complexioned woman, pale and emaciated, but of bright and cheerful disposition. She complained of little pain. Her temperature was normal in the morning, and about 100° in the evening. There was a solid swelling the size of a closed fist, smooth, hard, and fixed, extending upwards for a height of 2½ inches above Poupart's ligament on the right side. Its upper border was parallel with Poupart's ligament. It was continuous with a mass in the pelvis to the right and in front of the uterus, which was enlarged and retroflexed. Nothing abnormal was detected on the left side or in Douglas's pouch.

It was decided to watch the case with a view to determining how far the swelling was due to cellulitis, and to see whether an abscess was about to point externally.

After being under observation for a month the induration in the abdominal wall itself had disappeared. The hard irregular mass in the pelvis could now be felt more distinctly; it was firmly fixed to the abdominal parietes in front, to the lateral wall of the pelvis on the right, and to the uterus behind and to the left. The patient, though very cheerful, was distinctly losing flesh, and it was evident her general condition was not improving. The diagnosis was suppurative inflammation of the right uterine appendages. Abdominal section was now advised and agreed to.

The operation was performed on February 21st. The contents of the pelvis were matted together and roofed in by adherent omentum. This having been partially separated and turned aside, it seemed at first hopeless to attempt to unravel the tangled mass beneath. At length, however, a separation was effected, first of the left uterine appendages, then of the cæcum and appendix vermiformis, and lastly of the right uterine appendages. On the left side there was found a thin-walled adherent cyst, the size of a large orange, behind the broad ligament and adherent to the floor and back of the left posterior fossa of the pelvis. This was ruptured during removal, a quantity of serous fluid escaping. (It was afterwards found that this was a collection of serous fluid in the connective tissue of the broad ligament, and not a true cyst.) The left tube was occluded and slightly dilated, but of normal consistence and not thickened. On section, after removal, it was found to contain blood-stained muco-pus, the mucous membrane being swollen and œdematous. The left ovary was normal. The cæcum and vermiform appendix formed part of the adherent mass on the right side. On bringing them into view after separation, the thickened peritoneal coat of the cæcum was found to be torn. The rent was repaired by three Lembert's sutures of fine silk. The appendix was normal. The fimbriated end of the right tube and the right ovary (the latter enlarged to the size of a pigeon's egg, and lying just beneath the

tube) were very firmly attached to the upper part of the right lateral wall of the pelvis and the adjoining portion of the under surface of the anterior abdominal wall. On detaching them it was found that they had enclosed an abscess cavity, containing soft, purulent débris, evidently discharged from the open fimbriated end of the Fallopian tube. The wall of the pelvis where this abscess had been, presented a ragged, irregular surface. The right tube, much thickened, elongated, and indurated, on leaving the uterus first turned forwards and inwards, forming a knuckle in front of the body of the uterus; it then ran directly outwards, the fimbriated end being attached to the pelvic wall, &c., in the manner already described. The tube was empty; its mucous membrane was swollen, and its fimbriated end highly congested. The right ovary was large and œdematous. On making a longitudinal section through it there were found two abscesses containing thick greenish-yellow pus: one at the outer end, near the abdominal ostium of the Fallopian tube, equal in size to a cherry; the other at the inner end about half that size.

Both ovaries and both tubes were removed. There being an extensive hollow, with a considerable raw surface and much oozing of blood on the right side of the pelvis, it was packed with iodoform gauze. The abdomen was then closed.

The gauze was removed in forty-eight hours, a large quantity of brownish-red fluid, without ill odour, making its escape at the time. An india-rubber drainage-tube was inserted. An enema was administered on the evening of the third day, which acted fairly well and gave great relief. Flatus passed freely. There was no sickness after the second day. On the fourth day the quantity of fluid passing by the tube was still considerable; it consisted chiefly of altered blood, and had now an offensive smell. The patient was lively and cheerful, but complained a good deal of flatulence.

The stitches were removed on the seventh day. There was suppuration along some of the suture tracks. The

discharge from the wound had by this time become more purulent, but still contained a large admixture of blood. It was now only very slightly offensive. There was no abdominal distension, and the general condition was excellent. The appetite was good, the patient slept well, and the bowels responded easily to enemata. The drainage-tube was finally removed on March 16th (twenty-fourth day); the discharge was still purulent and fairly copious. The patient was gaining flesh, and was sitting up on a couch. She left the home a fortnight later in excellent condition. At the site of the drainage-tube there still existed a small sinus, which finally closed two months later, and gave no further trouble. She wrote from Broadstairs on June 27th to say she was going on remarkably well. She was suffering from flushes, noises in the ears, and other symptoms of the menopause, and complained of an occasional pain in the right groin; but she was a stone heavier than when she left the home, and appeared to be still gaining weight.

The pelvic inflammation in this case was clearly the result of septic infection at the time of labour. Symptoms of fever, preceded by an attack of shivering, set in two or three days after delivery, and continued for eleven weeks. There appears, then, to have been a period of a little over a fortnight during which the temperature was normal. But in the fourteenth week it again rose, and from that time various manifestations of blood-poisoning succeeded one another without interval up to the time of the patient's arrival in England in the middle of the twenty-fourth week after her confinement; so that the illness had been practically continuous during the whole of that time. The patient seems to have been left to the tender mercies of a careless and cruel nurse-midwife, who, so far from having conducted the labour antiseptically, habitually neglected the simplest rules of personal cleanliness.

With regard to the other possible sources of infection, gonorrhœa and tubercle, it was ascertained that the patient's husband had had no symptoms of gonorrhœa

after his marriage or for the twenty-five years immediately preceding it, so that gonorrhœa may be safely excluded; whilst any suspicion of tubercle was removed by the condition disclosed at the operation. Moreover I have shown, in the introductory observations, that if any further evidence were needed to confirm the view here taken (as to the origin of the infection), it would be found in the position occupied by the Fallopian tube, a position it could scarcely have acquired had it not contracted its adhesions at a time when it happened to be lifted out of the true pelvis, its normal habitat, by the physiological growth and development of the pregnant uterus.

It will have been noticed that I was in no hurry to operate. It appeared just possible, from the seat of the induration, that the primary mischief had occurred in the connective tissue, and that an abscess had formed at the back of the pelvis, had spread to the iliac fossa, and was about to make its way to the surface. The case, therefore, was kept under observation for a month, in the hope that abdominal section might be avoided. At the end of that time the signs of cellulitis, so far from having increased or extended, having under the influence of complete rest almost disappeared, clearly showed that the cellulitis had been secondary. A further result of the diminution in the amount of superficial induration was that there could now be made out, on bimanual examination, a distinct, hard, irregular mass in the situation of the right uterine appendages. There was, therefore, no need to defer operation any longer. It was clear, from the persistence of the pyrexia and other symptoms, that suppuration was present; and now that it had been shown to be intra- and not extra-peritoneal, the sooner the abdomen was opened and the pus removed the better. The condition disclosed was purulent inflammation of both Fallopian tubes, the purulent contents of the right tube having escaped from the abdominal ostium and formed an intra-peritoneal abscess between the fimbriated

end of the tube and the pelvic wall, to which latter the fimbriæ had become adherent. The ovary, enlarged and adherent, formed part of the wall of this abscess, and had become secondarily infected. It was found on section to contain two distinct abscesses, one of them closely contiguous to the intra-peritoneal abscess, the other at the inner end of the ovary. Those who oppose surgical interference in these cases are accustomed to speak of operations undertaken for their relief as operations undertaken for the relief of pain rather than for the saving of life. I firmly believe that they save life much more frequently than is generally conceded, and that the case here related is an instance in point. If it be said, "Certainly in a case of ovarian abscess the operation is of a life-saving character, and is therefore justifiable," I would ask how in this case it could possibly be known, before the operation disclosed it, that there was an abscess in the ovary. Had the operation been delayed until the danger to life had been made apparent by the development of those violent symptoms that follow the bursting of such an abscess, the interference would probably have come too late. As it is, the patient has escaped this danger; and although the operation was one of great difficulty, and attended with considerable immediate risk, I believe it not only to have been justifiable, but to afford a striking instance of the saving of a life by timely intervention.

The next case is, in its main features, curiously parallel to the one just described. Here, too, the inflammation resulted from septic infection at the time of labour, and so far simulated, at first, primary cellulitis affecting the posterior part of the pelvis, that operation was for a time on that account deferred.

Case 2.—H. W—, aged 40, married, residing at Sydenham, was admitted into St. Thomas's Hospital February 23rd, 1894. She had been married twelve years, and had borne six children. She was delivered of her first child by the aid of instruments, the child being

stillborn. For some months afterwards she had a thick yellow vaginal discharge, and although she had no internal pain, and was never ill enough to necessitate confinement to bed, she found sitting so painful that she was in the habit of carrying a soft cushion about with her. She had had no pain during her first pregnancy, but during all her subsequent pregnancies she states that she suffered more severely than anyone can know. Her last labour took place January 10th, 1894, and lasted two days and nights. The child was puny, and it died within forty-eight hours of its birth. She says she was told that the cord and afterbirth were "rotten." She left her bed at the end of a fortnight, feeling all right. A week later she was seized with an attack of shivering, followed by incessant retching and vomiting for twenty-four hours. She had been in bed ever since, *i. e.* for a period of three weeks, suffering from occasional attacks of shivering, symptoms of pyrexia, and severe pain in the hips and lower part of the back and down the right thigh. For three days before admission she had diarrhœa, with loose watery stools.

On admission the patient was very ill and in constant pain. The right thigh was flexed on the trunk, any attempt to straighten it causing great pain in the groin. The temperature was 101·4°; the pulse 104. The urine was loaded with urates, and contained a trace of albumen. Sp. gr. 1020. The tongue was furred, and there was inability to take solid food.

On deep palpation of the lower part of the abdomen the uterus was felt as a tender, firm, fixed body a little to the right of the middle line, with its upper border 4 inches above the symphysis pubis. The length of its canal was $2\frac{1}{2}$ inches. On examination under ether a hard, irregular, nodular swelling was felt firmly attached to the back of the uterus; it passed upwards and to the right, where it became firmly attached to the brim of the pelvis. Nothing abnormal could be detected on the left side. The diagonal conjugate diameter of the pelvis was $4\frac{3}{8}$ inches.

There was no depression of the lateral fornices of the vagina.

The patient's condition, so far from improving under the influence of rest, became steadily worse. The pain in the right groin increased in severity. The evening temperature remained high, reaching from 101·2° to 102·4° almost every day. The anorexia persisted. The bowels were constipated.

It was inferred from these symptoms that there was suppurative inflammation of the right uterine appendages, although no physical evidence of the presence of pus was forthcoming.

At the end of a fortnight, therefore, it was decided that an operation ought to be performed. The patient and her friends readily gave their consent.

Abdominal section was performed on March 8th, 1894. The mass on the right side, having been exposed and brought into view, was found to consist of uterine appendages and cæcum matted together, the whole mass being firmly adherent to the pelvic wall. The Fallopian tube was seen running along the upper border of the mass. While the adhesions were being separated some pus escaped. The cæcum was much thickened by inflammation and extremely adherent. Fortunately the parts could be kept in view whilst this adhesion was being separated. The appendix vermiformis was quite free from the mass and healthy. A roughened and ragged surface was found on the wall of the pelvis. It had clearly formed part of the wall of an intra-peritoneal abscess between the pelvic wall and the matted uterine appendages, on which a similar surface was seen. This abscess was evidently the source of the pus that had escaped during the operation. The Fallopian tube communicated with this abscess through its open fimbriated end, which easily admitted a large probe. The ovary, which formed part of the wall of the abscess, did not communicate with it. The mass, having been separated, was lifted up, tied off, and removed. A portion of the

psoas muscle adjacent to the abscess was felt to be indurated by inflammatory exudation. A wound on the posterior surface of the uterus caused by the separation of adhesions was repaired by means of three sutures of fine silk. A serous cyst on the anterior surface of the broad ligament was emptied by puncture. The appendages on the left side were examined and found to be perfectly healthy. The abdominal cavity was cleansed by sponging. The vagina and rectum were examined and found to be uninjured. A glass drainage-tube was inserted and the abdominal incision closed.

The parts removed measured *en masse* $2\frac{1}{2}$ inches × 2 inches × $1\frac{1}{2}$ inches, and consisted of part of the right Fallopian tube, the right ovary, and a portion of the right broad ligament. The Fallopian tube was empty, but the mucous membrane was inflamed and œdematous. In the ovary, which, as has been already said, formed part of the abscess wall, were found two abscesses, one the size of a walnut, the other rather larger. These two abscesses communicated with one another by an ulcerated aperture, $\frac{1}{4}$ inch in diameter, surrounded by inflamed ovarian tissue, and presented on their internal surface a similar ragged appearance. This surface was greyish yellow in colour, and was covered with purulent lymph. In other parts the tissues of the ovary appeared fairly healthy.

The temperature for the first twenty-four hours was normal and subnormal. On the second and third days it ranged between normal and 100·4°; after which it never reached 100°, and was generally normal. On the third day an india-rubber tube was substituted for the glass one, and a simple enema was administered, with the result that a large quantity of flatus was expelled. On the fourth day another enema was given with very good result, and the patient from that time was able to pass urine naturally. The sutures were removed on the ninth day, and on the twelfth day the drainage-tube was removed. The discharge became purulent on the third day, and after the removal of the drainage-tube the sinus still continued to

discharge a little pus. There was considerable shock for the first two days, after which the patient rapidly improved in condition, and began to gain flesh. The right thigh regained its normal power of extension within a very few days after the operation. The patient left the hospital on the 9th of May, looking so stout and well and cheerful, and with so clear a complexion, that she was scarcely recognisable as the haggard, sallow, emaciated, miserable creature that she was on admission. There was still a very small sinus at the lower angle of the wound. She called to report herself on her return from the convalescent home three weeks later. She was in excellent condition, and felt better than she had done for several years. The sinus had not quite healed.

The condition of things disclosed in this case at the operation was so similar to that in Case 1, that the remarks upon that case apply almost equally well to this. Here, too, I firmly believe that the result of the operation was not only to restore health, but to save life. The mischief in the ovary had advanced a stage further than in the other case. There were, as in that case, two abscesses, but these, instead of being distinct, had communicated with each other by a process of ulceration.

One other point in the case merits a moment's attention, on account of the light it sheds on the immediate cause of the inability to extend the thigh upon the trunk in many cases of puerperal pelvic inflammation. The focus of greatest intensity of the inflammation, which was on the pelvic wall where the abdominal ostium of the Fallopian tube had become adherent, and where an intra-peritoneal abscess had formed, was over the inner edge of the psoas, with the result that local induration of the muscle had occurred from inflammation of its connective-tissue elements. After the removal of the pus the muscle quickly recovered its function, and within a week the patient was able to extend her thigh completely and without pain or difficulty. This helps us to understand how, at least in some instances, the flexion and stiffness of the thigh are

produced, and how it is that efforts at extension are attended with such severe pain.

The third and last case, though also one of ovarian abscess, differed in many particulars from the foregoing. It was almost certainly gonorrhœal in its origin; it had advanced to the stage of rupture, and the operation for its relief was too late to save life.

Case 3.—L. C—, aged 22, single, a domestic servant, was admitted into St. Thomas's Hospital as a case of emergency late in the evening of the 24th February, 1894, at the request of Dr. Burgess, of Streatham.

The patient was a fair-complexioned girl, with flushed cheeks, looking extremely ill, and complaining of acute pain and tenderness in the lower part of the abdomen, chiefly on the left side, where there was a swelling to be presently described. The temperature was 103·2°, the pulse 128, the tongue dry and coated with a white fur.

The following very imperfect history was all that could be obtained. The patient had only menstruated four or five times in her life, the first occasion being at the age of eighteen. She last menstruated about eighteen months ago. The flow, even when it did appear, was scanty, and did not last more than one or at the most two days. Except for an attack of pleurisy at the age of sixteen, the patient states that she enjoyed good health until the month of January, 1893, when, after a period of amenorrhœa lasting some four or five months, she was taken ill with pain and swelling in the abdomen. This illness lasted for several months. The swelling is said to have disappeared about the month of July, after which she gradually gained strength, and in November she states that she was as well as she has ever been. During the illness she is said to have had several transient attacks of paralysis, evidently of a functional character. From November she remained apparently quite well, and was at work up to February 21st, 1894, three days before her admission, when she was suddenly seized whilst at her work with acute pain in the lower part of

the abdomen, chiefly on the left side, accompanied with vomiting and rise of temperature, and soon followed by swelling of the abdomen. She was so ill that she had to go to bed, where she remained until she was sent up to the hospital. On the day before her admission (February 23rd) there was retention of urine, and the catheter was required.

On admission a swelling was observed in the lower part of the abdomen, rising out of the pelvis, and extending to the left side and upwards nearly to the level of the umbilicus. There was an obscure sense of fluctuation over the most prominent part. On vaginal examination the cervix uteri was found to be pushed against the symphysis pubis by a fluctuating tumour which bulged down the posterior fornix. The uterus lay immediately beneath the abdominal wall, a little to the left of the median line. The uterine sound passed the normal distance, 2½ inches.

During the two days following the patient's admission the temperature ranged between 101·2° and 102·8°. The general condition remained the same. The tenderness and paroxysmal pain were very acute.

It was evident that there was acute pelvic suppuration due to some pre-existing disease of the uterine appendages, and that the only hope for the patient was to evacuate the matter by operation. It was decided to perform abdominal section. The consent of the friends having been obtained, the operation was performed at 2 p.m. on February 26th. Immediately on reaching the peritoneal cavity and separating some adherent omentum, a quantity, estimated as at least a pint (16 fl. oz. being collected and measured in addition to what escaped), of thin, flaky, highly offensive pus flowed out. The upper part of the wall of the abscess was formed entirely by thickened and inflamed omentum, which formed as it were a dome over it. Behind and below the abscess was bounded by the posterior wall of the pelvis and the rectum, the latter much inflamed and thickened. In front lay the right broad ligament, enormously thickened by chronic cellulitis,

and the right uterine appendages, in which the abscess had evidently originated. The uterus, rotated with its right side forwards and upwards, lay to the left and in front of the abscess. After thoroughly douching the abscess cavity an assistant was directed to place his finger in the rectum, and the right uterine appendages were separated from their adhesions, brought into view, and removed. The right Fallopian tube was so friable that it was torn in several places during the separation. It was much thickened from chronic inflammation. The ovary was represented by a thick-walled, empty abscess cavity $2 \times 1\frac{1}{2}$ inches in diameter. In its wall was a rent large enough to admit the finger. Its inner surface was ragged and ulcerated, and covered in places with granulation tissue. The wall appeared on section to be composed of condensed ovarian tissue. The broad ligament at the line of section measured $\frac{3}{8}$ inch in thickness.

The left appendages were next separated and removed. The ovary was converted into a small cyst, containing clear yellow fluid. The tube was thickened by chronic inflammation to such an extent that its wall in places measured $\frac{3}{8}$ inch in diameter. It was tortuous and elongated. Its mucous membrane was pale and highly œdematous. The tube was empty, and its fimbriated end was open. There was excessive cellulitic thickening of the left broad ligament. A considerable portion of the inflamed and matted omentum, which had roofed in the abscess, was now ligatured in sections and removed. It was lined by a layer of adherent purulent lymph. The cavity was again flushed with a hot douche of solution of boracic acid; a glass drainage-tube was inserted, and the abdominal incision closed.

The operation lasted two hours, and was attended with much shock, especially during the removal of the right uterine appendages, when it became necessary to inject twenty minims of brandy subcutaneously.

The patient's temperature after the operation was 97°, but it rapidly rose in the evening to 101°; the pulse at

the same time becoming very rapid, weak, and irregular. At 5 o'clock next morning she became unconscious, delirious, and noisy, and she died at 5.30.

A post-mortem examination was made the following day by Dr. Herbert P. Hawkins, from whose notes the following is an extract. "There was a 3½-inch median, sutured, unhealed incision between umbilicus and symphysis. On opening this up, it was found to lead into an abscess cavity of considerable size, situated almost entirely in the pelvis, containing about an ounce or so of dark brown, non-offensive, thin fluid.

"There was no affection, past or present, of the general peritoneum. The floor of the abscess, which lay practically in Douglas's pouch, was formed by the large flattened rectum below, and above by the free edge of the omentum, which dipped down into the pelvis. On the left it surrounded a large loose portion of the sigmoid flexure; on the right it was bounded by the pelvic wall and the psoas, but did not extend on to the iliac fossa. In front it was bounded by the uterus. Its wall was covered with tough shreds of false membrane, and the lower part of the rectum, where it came into relation with the abscess, was partially denuded of its peritoneum. The sigmoid flexure, the summit of the uterus, and a coil of small intestine showed signs of the recent separation of adhesions. There was no perforation of the bowel. On the right side, just external to the lower end of the psoas, a ragged aperture in the peritoneum led into an abscess cavity in the retro-peritoneal tissue which could contain the last phalanx of a man's forefinger.

"The lax tissue between the bladder and symphysis was highly œdematous.

"The uterus itself showed no disease internally; it was of normal size, the cervix and the body being, however, of nearly equal length.

"Both uterine appendages had been removed, and the stumps remained well secured. Neither ovary could be found.

"The right ureter showed a little distension for a length of two inches above the pelvic brim, due to the thickening of the retro-peritoneal tissue in the pelvis. The upper part of the ureter was normal, but the pelvis of the kidney showed unmistakable evidence of commencing hydronephrosis. The left ureter was normal. The bladder was thick-walled, but otherwise healthy. The kidneys were hyperæmic. The pleuræ and pericardium were normal. The lungs showed dark congestion of the lower lobes. The heart was healthy in all respects.

"The liver was soft and flabby. The gall-bladder was distended with clear colourless fluid; it contained a stone the size of a hazel-nut, and another of similar size completely blocked the cystic duct.

"The spleen was very large and soft. The brain showed no trace of past or present disease."

The chief value of this case is the illustration it affords of one of the natural modes of termination of cases of ovarian abscess when these abscesses are left to take their own course: the imprisoned pus, gradually it may be, but surely, makes a way of escape for itself by a process of ulceration; the wall of the abscess becomes thinned by this process, and eventually gives way, either by rupture or by perforation, and the contents of the abscess escape. Sometimes the wall of the ovary has acquired adhesions to neighbouring parts, and the abscess is evacuated into the rectum, or into the vagina, or into the bladder. In the instance before us the pus escaped into the peritoneal cavity. Owing to the presence of adhesions it did not become diffused, but formed an intra-peritoneal abscess, which rapidly increased in size, so that within a few days it had formed a swelling that not only filled the pelvis but extended into the abdomen, and was plainly perceptible there as a distinct fluctuating tumour nearly reaching the level of the umbilicus.

The case also illustrates very forcibly the illusory character of a temporary subsidence of symptoms in some of these cases of severe pelvic inflammation. Had this

case been reported whilst the patient was at work and in apparently perfect health, it might conceivably enough have been quoted as an instance of cure without operation. I am persuaded that if cases of alleged cure by rest and medicinal treatment were followed up, not a few of them would turn out to have been instances of a kind similar to this, where for a time the purulent collection gave no indications of its presence, but where it was all the while quietly laying the train for a fresh outburst, and constituting a grave menace to the patient's life.

I have elsewhere ("An Address on Pelvic Abscess," 'Birm. Med. Review,' November, 1893) called attention to the unsuspected frequency of small suppurating ovarian cysts amongst the causes of acute pelvic peritonitis, and have shown that, next to purulent salpingitis, these cysts constitute the most common form of pelvic suppuration. Up to the end of October, 1893, I had performed abdominal section in eighty-three cases of pelvic suppuration (non-cellulitic). In no fewer than thirty of these I found one or more suppurating cysts of the ovary. In twenty-five of the thirty this condition was associated with salpingitis ; with active purulent salpingitis in thirteen, and with chronic salpingitis in twelve.

These figures strongly support the view that, in the great majority of cases, suppuration in the ovary, whether in the form of small suppurating cysts or simple abscesses (which are very difficult to distinguish from small suppurating cysts), is secondary to purulent salpingitis.

I trust that the Society will not think that its time has been altogether wasted in listening to this communication. Our knowledge of suppurative inflammation in the pelvis is still so imperfect, that even so small a contribution to its study as is afforded by the history of these three cases may not be wholly unprofitable.

Dr. Hayes could not think that Dr. Cullingworth's idea, that cases of ovarian abscesses and pelvic cellular abscesses, such as those related in his paper, were dependent upon a prior purulent accumulation in a Fallopian tube, was at all proven. Dr. Hayes remarked that in the first two cases septic infection was

the first step in the morbid phenomena, and surely this was often the cause or precursor of inflammation terminating in abscess; abscess in the cellular tissue, ovary, or tube, in any two, or in all three. Why assign the tube as the infecting source of the ovary or cellular tissue? He saw nothing in these two cases to substantiate such a view, and preferred to keep his mind in suspense rather than dogmatise. He would prefer the same attitude of mind regarding the third case in the paper. He failed to understand the author's explanation of how so large a collection of pus, so rapidly formed within the peritoneum without general infection, could come from some abscess in the ovary comparatively so small. Dr. Hayes was in full accord with Dr. Cullingworth's method of treatment.

Dr. Galabin said that he had met with several cases similar to those recorded by Dr. Cullingworth, and he agreed with him that the usual sequence of events was that the suppurative inflammation was communicated from the tube to the ovary. He considered that the liability of the ovary to suppuration in these cases afforded a strong argument in favour of removing both ovaries in cases of double pyosalpinx, since there might be small foci of commencing suppuration which might escape recognition at the operation. In one case he had reason to regret that this had not been done. The patient was a single lady, aged twenty-five, on whom he performed abdominal section on account of a painful lump on the right side. On the right side a peritoneal abscess and pyosalpinx were found, on the left pyosalpinx. The tubes were lined with cheesy material, apparently tubercular. The left ovary was removed with the tube, the right ovary could not be found. The patient continued to menstruate, and a sinus discharging pus remained at the site of the drainage-tube. From time to time pus became retained, and the temperature rose. About a year and a half later an increasing swelling began to be felt on the right side, and was thought to be suppurating cystoma of the remaining ovary. He decided to repeat abdominal section, and operated by a lateral incision. The coils of intestine had to be dissected apart by knife and scissors before the lump in the pelvis could be reached. It proved to be ovary enlarged to more than two inches in diameter, and containing several abscess cavities, one discharging by a sinus. The patient recovered from the operation after a severe illness, but unfortunately became insane, having a family proclivity that way, just as the sinus in the abdominal wall had closed. In another case recently he operated for double pyosalpinx on a girl aged twenty-one, and was anxious to preserve an ovary if possible, as she was engaged to be married. Finding, however, that they appeared inflamed and enlarged, and were adherent to the fimbriated extremities of the tubes, he removed them both. On incising them they

were found to contain several small abscess cavities, apparently suppurating follicles. Puncture during the operation had failed to reveal these. He thought that if the ovaries had been left in this case the sequel might have been similar to that in the former one. The patient recovered without any sinus remaining.

Dr. Duncan thought the Society greatly indebted to Dr. Cullingworth for the valuable contribution just read. He quite agreed with the author that in any case where pelvic suppuration was suspected the proper treatment was to perform abdominal section, as there was usually found to be pus either in the tubes or ovaries. Dr. Duncan mentioned a case he had recently seen in consultation, in which a lady had had for months an extremely irregular temperature with occasional slight rigors, but where the symptoms had been diagnosed as "neurotic;" there was distinct pelvic tenderness and thickening in the fornices, but though he (Dr. Duncan) diagnosed pelvic suppuration and advised exploratory laparotomy, the other physicians who saw the patient were averse to operation.

Dr. Griffith remarked that Dr. Cullingworth had not attempted to explain or to prove the most important pathological theory in his valuable contribution, namely, that ovarian abscess was the result of tubal inflammation; the explanation of this, if the fact were proved, would not be easy. It did not seem probable that an inflammation extending from the tube to the surface of the ovary would readily cause suppuration of the substance of the ovary. There is a group of cases, however, not referred to by Dr. Cullingworth, which explains a certain number of these cases, and their explanation is obvious. Dr. Griffith believed that suppuration of the ovaries was usually the result of septic inflammation occurring in connection with childbirth, abortion, or surgical operations extending through the broad ligament; the stroma, lymphatics, and blood-vessels of each being in direct continuity. In the severe fatal cases sloughing or suppuration of the ovaries is not rarely seen, and in the less severe cases abscess of the ovary remained after the parametritis had subsided, and kept the patient an invalid, or at least liable to constant fresh attacks of illness unless spontaneous evacuation occurred, or the ovary was removed by operation. Inflammation of the tubes was commonly present in different degrees in these cases.

The President said that Dr. Cullingworth's paper put before them instructive illustrations of the increase in our power of curing disease which pelvic surgery had brought about. He had seen two cases of ovarian abscess different from those related by Dr. Cullingworth. In each of these two cases there was a small cyst, full of pus, which he had enucleated from its bed in the ovary quite easily without rupture and without

hæmorrhage. The history of one of these cases might be interesting. She was married in 1871. Six weeks after marriage she had a severe illness attended with great pain, for which she was in the London Hospital under the care of the late Dr. Head. She was delivered in 1873, and afterwards had an illness described as "inflammation and fever." In 1874 she had a relapse of this illness, and was in the hospital under the care of the late Dr. Palfrey; the diagnosis then made was "pelvic cellulitis." In 1876 and subsequent years she was under the care of Dr. Herman as an out-patient; but she got no better, being in continual pain, and occasionally acute attacks laying her up. At last she got tired of ineffectual treatment, and ceased attendance. Dyspareunia had been severe since the illness, six weeks after marriage. In 1891 she again came for treatment, prompted by special reasons, but much the same in health. Dr. Herman now recognised the case as one which could be dealt with surgically; he opened the abdomen, and removed the suppurated cyst he had described. The patient lost her pain, gained flesh, and considered herself well. This case showed the chronicity of the morbid process, and also the advance of our power to cure; for doubtless this patient might have been saved twenty years of pain had our present knowledge been possessed when she first came under treatment.

Dr. Lewers said that Dr. Griffith had spoken of the connection between inflammatory affections occurring during the puerperium and abscess of the ovary. Some years ago Dr. Lewers read a paper before the Society describing a phlegmon of the broad ligament occurring in a patient who had died within a short time after her confinement. In that case, while the inflammatory process between the layers of the broad ligament was only in the stage of phlegmon, there being no suppuration there, yet in the adjoining ovary there was found, on section, a small abscess containing about a drachm of pus.

Dr. Cullingworth, in reply, said that so far from his having entered upon the inquiry as to the source of infection in cases of ovarian suppuration with a bias in favour of the views he had propounded, the very reverse was the case, for he had realised all along the difficulty, to which Dr. Griffith had given expression, of explaining how the infection travelled from tube to ovary. He therefore hoped Dr. Hayes would acquit him of the charge of making the facts suit the theory. It did not seem necessary to invoke pyæmia as the cause when there was such strong evidence of a local infection. Dr. Hayes had inquired where the enormous quantity of pus had come from that was found on opening the abdomen in the third case. The answer was that when perforation or rupture of a suppurating ovary or tube occurred, and the contents escaped amongst the surrounding peritonitic adhesions, a very active suppurative process was

often set up, the resulting abscess rapidly assuming a very large size and forming an abdominal swelling of considerable dimensions. The source of the accumulation in the case under discussion was the rupture of a suppurating ovary. He was grateful to Dr. Galabin for his estimate of the importance of the evidence he had brought forward as to the large proportion of cases in which suppuration of the ovary was associated with tubal disease, and for having called attention to the desirability of removing even apparently normal ovaries in operations for pyosalpinx. In reply to Dr. Griffith, he expressed his belief that the infection passed from tube to ovary directly through their respective walls, or from an intervening intra-peritoneal abscess. He considered the case analogous to the infection of certain dermoid tumours of the ovary supposed to originate from the contents of the adjacent rectum when the tumours had been bruised during the process of parturition, and thus rendered susceptible to infection. He thanked the President and Fellows for the interest they had taken in the paper. Its perhaps too didactic style was due to its having been begun with the intention of delivering it as a clinical lecture, a purpose for which it subsequently appeared to be unsuitable.

NOVEMBER 7th, 1894.

G. Ernest Herman, M.B., President, in the Chair.

Present—49 Fellows and 4 visitors.

Books were presented by Mr. Walter Heape, the Guy's Hospital Staff, and Dr. Galabin.

Robert Francis Burt, M.B, C.M.Edin., and David Petty, M.B , C.M.Edin., were admitted Fellows.

The following gentlemen were elected Fellows of the Society : — Walter Meent Borcherds, M.R.C.S. (Cape Colony) ; Arthur Mantell Daldy, M.D., B.S.Lond. ; Thomas Vere Nicoll, L.R.C.P.Lond. ; Adam William Thorburn Steer, M.R.C.S. ; William Atkinson Stott, M.R.C.S. ; Allen James Swallow, M.B., B.S.Durh. ; John D. Williams, M.D.Edin., B.Sc.

The following gentlemen were proposed for election :— H. Bellamy Gardner, M.R.C.S. ; R. W. Johnstone, M.D., B.Ch. ; Robert Thomas Alexander O'Callaghan, F.R.C.S.I. ; Herbert Edward Rayner, F.R.C.S.

Report on Dr. Eden's Specimen of Tubal Mole exhibited on Jan. 3rd, 1894 (p. 5).

The clot in the tube, examined under the microscope, contains numerous and distinct chorionic villi scattered

throughout its substance. This appearance is distinct proof of tubal gestation.

ALBAN DORAN.
T. W. EDEN.
J. BLAND SUTTON.

Report on Dr. Leith Napier's Specimen of Deformed Fœtus.

External appearances.—The fœtus is found to measure 11 inches in total length, and appears to be in the seventh month of development. It is the subject of retroflexion and right latero-flexion, the flexion being most marked in the cervical and upper dorsal regions.

On its abdominal surface is a mass the size of a large orange, consisting of viscera, and attached by a pedicle composed of amnion and peritoneum closely united. In this pedicle, between the amnion and peritoneum, run the vessels of the umbilical cord, surrounded by Wharton's jelly ; the vessels start on the under aspect of the pedicle and turn round at once to its left side ; they then pass forwards and upwards to what appears to be the apex of the sac. This is where the attachment to the placenta has been divided. The ligature included the vessels of the cord, Wharton's jelly, and the continuation of the amnion lying on their upper surface. The amnion does not completely cover the extruded viscera. In the uncovered area the chorion must have come directly into contact with the peritoneum. The peritoneal sac was probably formerly complete. The viscera contained in the sac include the greater part of the abdominal contents, the heart lying within the pericardium, and the left lung.

The face and vertex are normal. The head is rotated towards the right ; the hairy scalp descends to within a short distance of the iliac crest. A tumour arises from the left occipital region, and the attachment of this

tumour extends down the left side of the trunk nearly to the iliac crest. The chin is on the same plane as the front of the thorax ; the right ear lies in a fold composed partly of loose skin, and partly of subcutaneous tissue. The prolabium is well marked ; the palatal processes are deficient in the middle line.

With the exception of talipes varus of the right foot, the other external appearances are normal.

Dissection.—An incision was now made in the anterior surface of the trunk from the chin to the upper edge of the abdominal sac. The thorax was found to be thickly covered with subcutaneous fat. The intestine was divided about the level of the rectum, and the alimentary canal separated as high as the œsophagus.

Alimentary canal.—The course of this is found to be normal throughout. The cæcum and vermiform appendix are well developed ; there is no appearance of vitelline duct. The pancreas is of normal size. The diaphragm seems to be represented by a few muscular strands which surround the cardiac orifice of the stomach, and by a tendinous expansion interspersed with muscular fibres running between the pericardium and the upper surface of the liver.

Heart.—The pericardium contains a small quantity of grumous fluid. The heart was of normal size, and the main vessels connected with it appear as usual.

The umbilical vessels may be traced back from the insertion of the cord ; the two arteries run one on each side of a well-developed urachus. The vein enters the liver in the normal way.

Lungs.—The left lung lies in the sac ; the right is situated inside the thorax, with normal fœtal relations. Neither lung contains air. The large vessels of the neck, trachea, œsophagus, and thymus are normal.

Kidneys.—The kidneys are united inferiorly by a median lobe, thus presenting an example of "horseshoe kidney." The transverse measurement of the composite organ is $1\frac{3}{4}$ inches ; the greatest vertical measurement is

1 inch on each side. The ureters start from the middle of the inner border of each half of the kidney mass, and descend in front of the median lobe.

Of the abdominal vessels the right internal iliac artery is missing; the right hypogastric artery arises from the right external iliac. The left internal iliac artery gives off branches to the right side across the middle line.

An incision was made in the scalp following the lines of the sagittal and lambdoidal sutures, the skin reflected, and the thinned portion covering the meningeal sac dissected off.

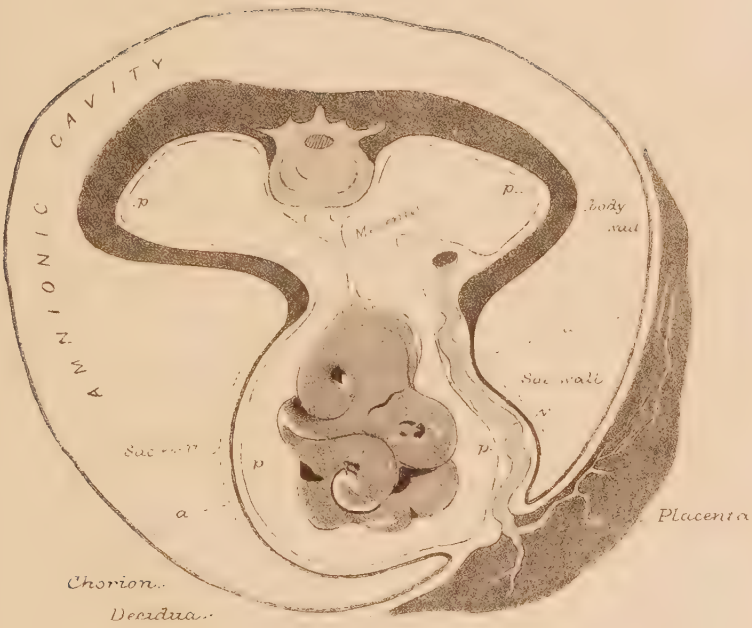
Head.—The tumour mentioned as being attached to the occipital region on the left side proved to be a meningo-encephalocele, the pedicle of which passes out between the skull and the vertebral column. On opening the sac, which is about the size of a hen's egg, it is found to contain a quantity of turbid watery fluid mixed with decomposed brain-matter.

On the right side, between the shoulder and the head, is another cyst, the size of a pigeon's egg, which, however, caused no projection of the surface. Its pedicle arises from the thyroid tissues in front of the trachea, and its contents consist of clear fluid mixed with a quantity of yellowish semi-gelatinous matter.

Skeleton.—Limbs and limb-girdles.—These were normal with the exception of talipes varus of the right foot.

Skull.—Palatal process of the maxillary bone of each side is deficient, leaving the vomer and turbinated bones visible from the mouth. The anterior margin of the foramen magnum is deficient in consequence of the absence of the basi-occipital portion, whereby the basi-sphenoid bounds anteriorly the much enlarged foramen between the cavities of the skull and spinal canal. With these exceptions the skull is normal.

Vertebral column.—The cervical and upper dorsal vertebræ are involved in a sharp curve whose concavity looks backwards and to the right. Owing to this curve the posterior portion of the skull is in apposition with the



Diagrammatic section of fœtus and placenta, at level of protrusion, to shew relation of Amnion (a), to peritoneum (p), in the formation of the sac, and the situation of the umbilical vessels (v) in the sac-wall between amnion and peritoneum. The peritoneum is seen to come into direct contact with the chorion of the placenta.

West, Newman lith.

right posterior surface of the vertebral column. The laminæ of the vertebræ involved in the curve have remained widely separated,—as far down, in fact, as the second lumbar; and as a result of this separation, and of the deficiency of the foramen magnum above mentioned, the cerebral and spinal cavities are thrown into one, and the under surface of the brain rests in part on the posterior surface of the bodies of the vertebræ.

The second lumbar vertebra is complete. The third, fourth, and fifth lumbar vertebræ have no spines, nor are their laminæ properly united; but the spinal canal is roofed over by a firm triangular plate of bone, whose apex coincides with the spine of the second lumbar, and whose base, ½ inch wide, is at the inferior border of the fifth lumbar vertebra. This plate of bone is 1 inch long. The sacrum is normal; but between it and the last lumbar vertebra is a spina bifida occulta. The ribs on the left side are well developed, and articulate with the left border of the sternum. On the right side the ribs are incomplete and imperfectly developed.

Remarks.—The specimen is an instance of the absence of an umbilical cord in combination with retro- and latero-flexion, extroversion of viscera, and non-closure of parts of the cerebro-spinal canal.

The following explanation is suggested.

There was no umbilical cord developed from the allantoic stalk. The fœtus was therefore unable to leave the uterine wall, as the centre of its body was attached by the umbilical vessels to the chorion adherent to the uterine surface. On account of this application the edges of the abdominal wall were unable to close round an umbilicus. This inability to close was due also to the diminution of the available body-cavity caused by the convexity forward of the vertebral column (retroflexion), resulting in protrusion of viscera. The retroflexion was brought about by the application of the anterior surface of the embryo to the concave uterine wall. The protrusion of the viscera was possibly due in addition to

attempts on the part of the trunk to grow in its normal attitude of flexion to the front, as by such attempts the body-cavity would be withdrawn off its contents to some degree if the latter were fixed to the uterine wall. The fact of the latero-flexion being to the right, supports the above method of accounting for the flexion, as the umbilical vessels were to the left side of the middle line. The spina bifida occulta and the meningocele were possibly secondary to the retroflexion, but were more probably part of an original incomplete development of the central nervous system usually found in combination with mal-development of the alimentary tract and its processes. In the present specimen the mal-development of the processes was confined to the part of the allantoic stalk (according to His) which goes to form the umbilical cord. This latter alternative is the more likely since the flexion in this case is most marked where the vertebræ are most deficiently developed; and this is not the part of the vertebral column opposite to the point of attachment of the fœtus to the uterine wall, but is in the cervical region. The mal-development of the spine was therefore most likely primary, and determined the site of the flexion of the spine, which had to bend backward somewhere, and did so in its weakest part. The retroflexion was therefore secondary.

It is worth noticing that there was no persistent vitelline duct, as Ahlfeld believes that this fœtal relic causes the combination of ectopia viscerum and retroflexion by dragging the gut out of the abdomen, and thus pulling the centre of the spine to the front.

Arthur E. Giles.
W. Dakin.
Leith Napier.

PRIMARY CARCINOMA OF THE FALLOPIAN TUBE.

By C. J. Cullingworth, M.D.

Dr. Cullingworth exhibited a spirit preparation from St. Thomas's Hospital Museum of primary carcinoma of the right Fallopian tube, with secondary infection of the broad ligament, and of the exterior of an ordinary adenomatous cyst of the corresponding ovary. The specimen was removed by abdominal section on July 21st, 1892, from a married woman named E. G—, residing at Ewell, near Epsom. The patient's age was sixty. Her mother was said to have died of cancer in the chest at the age of sixty-three. Her own history was as follows:—The catamenia appeared at the age of fifteen, and were regular up to the age of forty-eight, when she had an illness said to have been consequent upon a chill received during menstruation. She was confined to bed for several weeks, and leeches and poultices were applied to the lower part of the abdomen. The catamenia ceased for a time, but afterwards recurred regularly as before until the age of fifty-one or fifty-two, when they finally ceased. She was married in 1853, but had never become pregnant. Her husband, a healthy stonemason, was still living. At the menopause the patient had an attack of jaundice, and was ill for two months, six weeks of that time being spent entirely in bed.

She dated her present illness from an attack of severe paroxysmal pain in the right iliac region, which occurred suddenly, in March, 1892, whilst she was going upstairs. The pain lasted a week, and gradually spread over the whole abdomen. There was absolute constipation for twenty days, when a natural motion was passed. After some weeks in bed she recovered, but had a relapse about the end of April, and had been in more or

less pain ever since. About three weeks before admission (July 16th) she noticed that her abdomen had become enlarged, and that there was a hard lump to be felt low down. It was thought an abscess was in course of formation, and leeches and poultices were ordered to be applied. The lump had continued to grow; there had been gradual loss of flesh, dating from the attack in March, but, notwithstanding this, the patient on admission was healthy-looking and fairly well nourished. Her tongue was clean, her temperature normal, her urine free from albumen or sugar, and of specific gravity 1015. The chest signs were all healthy, the abdomen was somewhat distended, chiefly in the flanks and at the lower part. There was a hard, nodulated tumour in the hypogastric region with a well-defined margin, 4½ inches from the anterior superior spine of each ilium. There were two hard nodules to the right of this, very superficial and apparently unconnected with the main mass. The front of the abdomen was for the most part resonant on percussion; there was dulness from the pubes upwards to a distance of about 4½ inches, and also in the flanks, the note in the latter situation changing with the position of the patient. The girth at the umbilicus was 33½ inches; the other measurements elicited nothing of special interest.

Abdominal section was performed on July 21st, 1892. There was a quantity of free fluid in the peritoneal cavity. The right ovary was the seat of a large cystic tumour adherent to neighbouring parts. The walls of the tumour were thin, but contained in places on their external surface numerous nodules of solid growth. The cyst contained about six pints of dark brown fluid. In front of the ovarian tumour and attached to it lay a hard, inflexible, elongated tumour about 3½ inches long and an inch in diameter, consisting of the right Fallopian tube infiltrated with new growth. The diseased tube and ovary were removed by tying and dividing the broad ligament in the usual manner. The divided tissues were

thickened, probably from extension of the growth. The ovarian cyst was ruptured during removal, some of its fluid contents escaping into the peritoneal cavity. The uterus was apparently unaffected by the disease. The pelvic glands were felt to be enlarged and indurated. A band of omentum was adherent to the anterior abdominal wall just below the lower angle of the incision. In the omentum at the site of the adhesion was a hard mass of new growth about an inch long and half an inch broad. An attempt was about to be made to remove the nodule, when it was noticed that it had attached itself to and implicated the wall of the bladder. The right kidney was felt to be enlarged and fixed. The pelvic cavity was well irrigated (on account of the contents of the cyst having escaped), and the abdomen was closed without drainage.

The patient recovered well from the operation, the temperature on no occasion reaching 100° F. She was discharged on the twenty-third day with a good appetite, and feeling greatly relieved.

Exactly six months from the day on which she left the hospital, viz. on February 13th, 1893, she came complaining of symptoms that suggested threatened intestinal obstruction. She had been fairly well in the meantime, able to get about, and comparatively comfortable and free from pain, but since Christmas had been obliged to take aperients which caused her much pain. She looked well, and had lost very little flesh. There was at that time no re-accumulation of fluid. A lump could be felt above the umbilicus. For her subsequent history I am indebted to the kindness of her medical attendant, Dr. Daniel of Epsom, who writes as follows:—"Within a few months of [Mrs. G.'s] death, the dull aching with occasional shooting pain recommenced. The whole region of the uterus became a large, hard, and irregularly globular mass, firmly adherent on the right side, but with slight movement on the left, and a large portion of the vagina was involved. The whole abdomen became

enormously distended, and there were occasional attacks of local peritonitis, some ascites, distension of veins, and œdema of the legs. Constipation increased, vesical troubles supervened, and the patient became unable to take food. For a few weeks previous to her death she was kept under the influence of opium or morphia." She died from exhaustion on July 11th, 1893, ten days short of a year from the date of the operation. There was no *post-mortem* examination.

The following description of the parts removed (see Plate V) has been furnished by Mr. Shattock, curator of the St. Thomas's Hospital Museum. "The tube is transformed into a resistant, somewhat tortuous, coarsely nodulated, cylindrical mass, about 8 cm. (3 inches) long, which, on incision, presents an irregular cavity about 2 cm. in maximum diameter, with ragged, broken-down interior.

"The ovary is the seat of a large multilocular cyst, measuring in its collapsed state 6 inches × 4 inches. The interior of this offers no unusual appearance, but on the peritoneal aspect there are numerous small hemispherical elevations of new growth, which in places form a coarsely granular confluent layer, indicating peritoneal infection, arising probably from the interior of the tube, on the outer surface of which there occur similar elevations. The fimbriated end of the tube, however, appears at present to be closed.

"*Histology.*—Longitudinal sections carried through the entire thickness of the wall of the diseased tube show an infiltrating growth, having characters closely resembling a duct carcinoma of the breast. Close up to the external surface, the walls of the tube (which at the part examined are about a quarter of an inch in thickness) are riddled with spaces lined with columnar epithelium ; the spaces have mostly so wide a lumen that they may be designated cystic, and into them there project papillary processes invested with similar epithelium.

"The histology of a prominent solid projection of new growth, about the size of a filbert, in the neighbourhood

DESCRIPTION OF PLATE V,

Illustrating Dr. Cullingworth's Specimen of Primary Carcinoma of the Fallopian Tube.

Fig. 1 shows the cancerous tube laid open. The ragged, irregular cavity is well seen, with its walls thickened by cancerous infiltration. A portion of the ovarian cyst has been retained to show the intimate connection between it and the posterior surface of the diseased tube.

A. Divided surface of diseased tube.

B. Irregular interior of same.

C. Outer surface of the ovarian cyst against which the tube lay and to which it was attached.

D. Closed cavity, probably a part of the canal of the tube isolated from the rest.

Fig. 2 shows a portion of the external surface of the ovarian cyst, upon which is seen a cluster of hemispherical elevations of (secondary) new growth, surrounded by scattered nodules of a similar character. The interior of the cyst was unaffected.

Fig. 1.

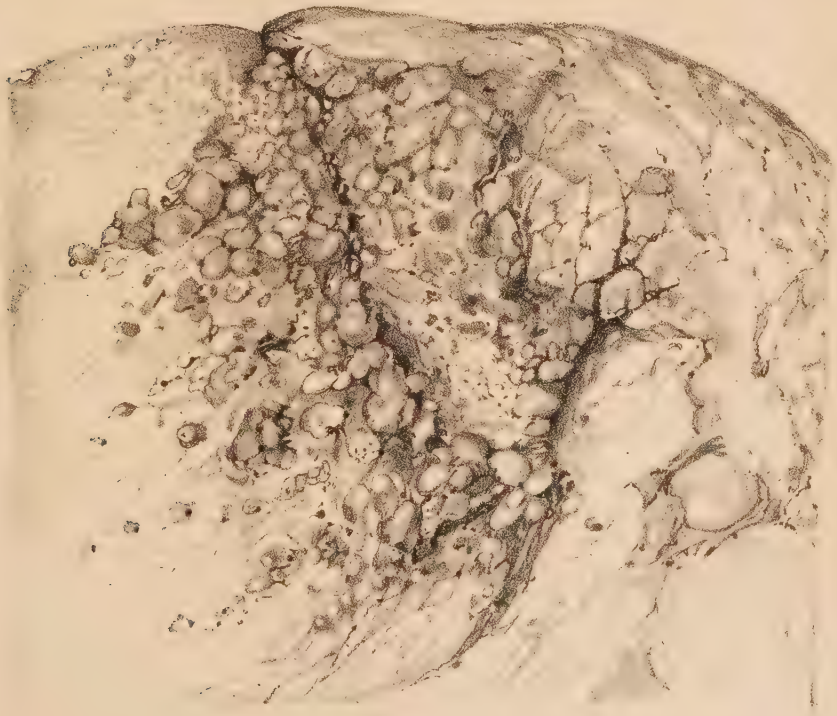


Fig. 2.

R.E. Holding del.

West, Newman lith

of the tube is for the most part precisely similar. But the section presents areas of younger date, in which the fibrous matrix is occupied with groups of small solid cylindrical epithelial processes; these, as they grow, acquire a lumen of increasing dimensions, until a microscopically cystic character arises, and intra-cystic papillary formation ensues.

"The section offers an additional and noteworthy appearance, and one not easy at first to interpret.

"The lumen of certain of the epithelial spaces is occupied by fibrous tissue. That it is the lumen of a tubule that is in question, and not the core of a papillary process, is clear from the fact that there is but a single investment of epithelium; *i. e.* there is no reflection of epithelium from the surface of what might be regarded as a papillary process to the interior of any containing space. Some of the lumina are filled with blood-clot, in which an abnormally large number of cell-elements is present; and it is to the organisation of blood shed into the tubules that I should attribute the existence of the connective tissue. The blood, in short, is organised by the ingrowth of granulation tissue from the connective tissue lying beyond the epithelium, much as takes place in the organisation of the thrombus in an artery that has been ligatured; or the process may be more aptly compared to the organisation of inflammatory lymph filling the air-vesicles in croupous pneumonia."

Mr. Alban Doran stated that in Dr. Cullingworth's case the patient was older than in any other already recorded. Seven instances of primary carcinoma had been reported in a satisfactory manner. In five the new growth had developed in an apparently normal tube (Martin, Zweifel, Tuffier, Westermark; and Dr. Amand Routh's case, where Mr. Thornton operated, and Mr. Doran reported the appearances in the 'Trans. Path. Soc.,' vols. xxxix and xl). There was bloody discharge or menorrhagia in all these cases. In two (Drs. Essex Wynter and Routier) there was a cyst, into which the ostium opened; the new growth extended from the tube into this cyst, which was probably a malformation of the kind

described by Zedel, and not a tubo-ovarian cyst. Kaltenbach's case, which he at first described as primary carcinoma of the tube, appeared on further examination to be a papilloma. Of primary sarcoma of the tube little was known. Landau's case was well reported. Senger of Breslau, and Charles Dixon-Jones of Brooklyn had described four, but all were based on post-mortem examinations alone, and it was suspected that, at least in Senger's tube, the deposit was inflammatory, not sarcomatous. There could be no doubt about treatment. Whenever a tumour developed on one side of the uterus in a woman about fifty, with sanious discharge, that tumour should be removed as soon as possible, as it may possibly be cancer of the tube. At the operation cancer cannot always be distinguished from papilloma. The tube must be removed close to the uterus. Dr. Cullingworth's case had lived for a full year. Should the disease prove to be papilloma recovery might be complete. Dr. Cullingworth must be commended for publishing his case in full, duly waiting for the after history.

OVARIAN TUMOUR COMPLICATING PREGNANCY —CYST RUPTURED DURING EXAMINATION —IMMEDIATE LAPAROTOMY—RECOVERY.

By William Duncan, M.D.

The patient, C. H—, a multipara aged 30, applied at the Chelsea Hospital for Women on October 5th, 1894, complaining of a bearing-down pelvic pain and a yellow discharge. Has had several miscarriages during the last year; the last one happened four months ago. The patient was examined at 4.30 p.m. by the resident medical officer, who found a cyst about the size of a large cocoa-nut, filling up the pelvis and pushing the enlarged uterus upwards and to the left. The patient was now examined by a clinical assistant, and during his examination he felt the cyst disappear suddenly, and the patient was seized with severe abdominal pain and collapse. She was at once admitted, and Dr. Duncan sent for. On his

arrival he found slight dulness in the flanks, but nothing abnormal in the pelvis. He performed abdominal section at 6 p.m. On opening the abdomen a lot of clear serous fluid escaped: the uterus was seen to be enlarged to about the size of a large orange (and thought to be gravid); the left appendages were found to be normal, but the right ovary was the seat of a cyst which had ruptured, so it was removed in the ordinary way. The fluid in the peritoneal cavity was sponged out and the abdomen closed; no flushing or drainage was resorted to. The patient made an uninterrupted recovery, except that she miscarried on the fourth day.

Dr. Duncan said the case illustrated the importance of great care and gentleness in palpating a pelvic cyst, especially as in some cases of pyosalpinx the cyst wall is in places very thin.

In answer to Dr. Cullingworth's question he said the amount of fluid in the abdomen was about a pint.

SARCOMA OF OVARY.

By W. R. Dakin, M.D.

Dr. Dakin showed a solid tumour of the right ovary which he had removed from a woman aged 26, a 3-para. She had noticed that her abdomen was increasing in size for nine months, and three months before that she thought she felt a moveable lump there. There was a moderate loss of flesh, not more than is found in the case of many ordinary multilocular cysts, and she had had little or no pain. Menstruation had not been affected. On examination the tumour felt so like a cyst that its solid nature was not suspected; and there was no ascites. She had a trace of albumen in the urine.

At the operation it was found that the tumour belonged to the right ovary and was solid. There were only two adhesions, both to the omentum; and as these were extensive, a fair quantity of omentum was ligatured and removed with the mass. There was little or no excess of peritoneal fluid. The patient made an uninterrupted recovery, and indeed began to pick up flesh at the end of a week after the operation. The left ovary was found to be normal in feel and appearance, and was left behind.

The tumour weighed 9 lb. 6 oz., and was homogeneous in structure to the naked eye after section. It measured 11 inches by 8 inches by 8 inches. It proved to be a mixed spindle- and round-celled sarcoma, and sections taken from different parts of the growth were alike in structure.

Some of the sections were shown.

The operation was performed a month ago, and Dr. Dakin proposed to report the after history of the case.

Dr. Cullingworth mentioned the case of a girl of nineteen, from whom he removed on April 1st, 1891 (three and a half years ago), a solid ovarian tumour 4 inches by 5 inches, which was pronounced by Mr. Shattock, after repeated examinations, to be an undoubted example of a spindle-celled sarcoma. The only symptom of ill-health in this case was menorrhagia, and the existence of the tumour was discovered, as it were, accidentally during a vaginal examination. The tumour was non-adherent. The opposite ovary was quite healthy, but was removed on account of the suspicious nature of the growth in its fellow. The girl made an excellent recovery, and up to the present time had had no recurrence. She was able to do her work as a domestic servant, and was now living at the house of a well-known surgeon in Harley Street. She continued to report herself at intervals. Such a result was highly encouraging, and he trusted Dr. Dakin would be able to give an equally satisfactory account of his patient.

CONCEALED ACCIDENTAL HÆMORRHAGE — FŒTUS, PLACENTA, AND MEMBRANES DELIVERED ENTIRE.

By W. R. Dakin, M.D.

Dr. Dakin showed a seven and a half months' fœtus born in its membranes, which were attached to the placenta.

The patient had had five abortions at the third and fourth months, and two children at term; the latter of which, being the result of the last preceding pregnancy, was born sixteen months ago. There was no history of syphilis. About six weeks before she expected her confinement she received some news which shocked her very much, and three days after this she suddenly began to have intense abdominal pain, which was constant and not intermittent. The uterus was found to be very tense, and tender to the touch, and the os showed no sign of dilating. She remained in this condition for fourteen to sixteen hours, when labour began with a gush of blood from the vagina. Two hours after this the fœtus enclosed in its membranes as described was born, and the ovum was immediately followed by a quart of firmly clotted blood, representing about three pints of fresh blood. There had been no fœtal movements and no fœtal heart to be heard for two days before labour began. The quantity of liquor amnii, though perhaps somewhat under the full amount, was not markedly less than normal. The child, by measurement and by its degree of development, was found to correspond to the date named. The placenta was healthy.

There was no history of a fall or a blow, and the concealed accidental hæmorrhage was either the cause or effect of complete detachment of the placenta. Dr. Bell, of Leytonstone, had kindly sent up the specimen to St. George's Hospital.

RUPTURED UTERUS.

By G. F. Blacker, M.D., F.R.C.S.

The patient, aged 33, had had six children previously, all delivered with forceps under chloroform, with great difficulty.

Labour commenced at 8 a.m. ; the membranes ruptured at 10 p.m., medical assistance being sent for at midnight.

At this time the patient's general condition was found to be good. Pulse 96. Pains infrequent and rather feeble.

The head was lying transversely, occiput to left, partially engaged. Diagonal conjugate estimated to be $3\frac{1}{4}$ inches.

Quinine sulphate, 8 grs., was given to induce more marked pains, with no result.

Chloroform was then administered, and forceps applied.

Before traction was made a hypodermic injection of citrate of ergotinine, $\frac{1}{100}$ gr., was given.

Traction was then made, but the forceps slipped. They were reapplied with the same result.

After the third application the cord was found prolapsed and pulseless. When Dr. Blacker saw the patient at 6 a.m. forceps had been applied some six times, with the result that they slipped each time.

The patient had been under chloroform two hours; was exceedingly collapsed ; pulse 122, small, and at times irregular.

The uterus was quite lax. There was no ring of Bandl. The parts of the child were easily felt, and pains were very infrequent and feeble.

Perforation and delivery with the craniotractor was easily effected.

On subsequent introduction of the hand a tear in the

left side of the cervix, passing into the left broad ligament, was discovered, the hand passing into a ragged cavity to the left of the uterus. There was no external hæmorrhage, nor had there been any previous to delivery. A strong iodine douche was given, and the patient removed to University College Hospital, close by.

On admission she was very markedly collapsed, complaining of some pain in the left iliac fossa.

Pulse 112, very small and feeble. Respiration 44.

There was slight deficiency on percussion in both flanks. She improved a little under the administration of brandy.

During the time she lived she had several attacks of intense pain in the abdomen and precordial region, accompanied with great respiratory distress and cyanosis. She finally died ten hours after delivery, immediately after the termination of one of these attacks of pain.

At no time after admission did her condition improve sufficiently to allow of any operative interference.

At the autopsy 1½ pints of blood were found in the peritoneal cavity.

The uterus was found to contain a tear 3 inches in length, passing through the left side of the cervix, and extending from the internal os to the vagina, communicating with a large ragged cavity in the left broad ligament. The latter was almost entirely torn away from the uterus, remaining attached only by the Fallopian tube, round ligament, ovarian ligament, and upper part of the broad ligament.

There was a subperitoneal hæmatoma reaching up to within 1½ inches of the lower end of the left kidney.

Three inches from the fundus in the anterior surface of the uterus was an incomplete rupture, involving the muscular fibres and the peritoneal coat only; and there were three smaller similar ruptures near the fundus.

The other organs were all healthy.

The child weighed 8 lbs. 10 oz., and measured 22 inches in length.

The diameters of the pelvic brim were as follows :—

Conjugate, $3\frac{1}{4}$ inches; transverse $5\frac{1}{2}$ inches; right oblique, $5\frac{1}{4}$ inches; left oblique, 5 inches.

The PRESIDENT said the Society was much indebted to Dr. Blacker for this interesting specimen, but more especially for the very full clinical history of the case which he had given, including, as it did, exact information as to the size of the pelvis and that of the child—points of the first importance, but yet often omitted in the reports of similar cases.

UTERINE FIBROID.

By J. H. GALTON, M.D.

DR. GALTON showed a specimen of uterine fibroid removed by enucleation after abdominal section, and the ovaries (one cystic) from the same case.

The case occurred in the Norwood Cottage Hospital, in a patient aged forty-two. A tumour filled the pelvis, projecting above into right iliac and hypogastric region. It could not be lifted out of the pelvis, and the os uteri was drawn upwards and forwards. The uterine sound passed 3 inches into a pyriform projection which could be felt in front of the tumour, and the uterus was moveable independently of the tumour. Dr. Horrocks saw the case and advised exploratory incision, which was made on November 5th, disclosing uterus and ovaries in front, tumour behind covered with peritoneum, which had been lifted up by growth backwards of the tumour from Douglas's pouch and the floor of the pelvis, so that the tumour was sessile and filled the whole pelvis. A trocar failed to find fluid to lessen its bulk, and the bleeding from the wound compelled completion of the operation, as had occurred in two previous cases which he had seen. The broad ligament was transfixed on either side, and tied on each side of

each ovary, and the ovaries removed. An incision starting from the trocar wound was made through the peritoneum, and the tumour enucleated by the fingers, leaving a broad pedicle of attachment to the back of the uterus. This was tied, but the uterine ligature slipped off and disclosed an open wound into the back of uterus through which a sound passed. This wound was closed by four silk sutures. There was but little hæmorrhage, and the abdomen was not washed out, owing to fear of subperitoneal infiltration. No drainage was used. The abdominal wound (which had been enlarged to 4 inches to admit removal of tumour) was closed by five silver wire deep sutures and the usual dressings applied. The operation lasted one hour and twenty minutes. The tumour weighed 1 lb. 10 oz. The patient was greatly collapsed during operation, but slowly recovered, and at present time, fifty-eight hours after, her pulse was 80 to 99·2; resp. 20. Urine was passed naturally, and she had abdominal respiration; was free from pain, although she had not taken any opiate since the operation.

Dr. Peter Horrocks said he had seen the patient before operation, and owing to the absence of menorrhagia and the smallness of the uterus he had looked upon the tumour as more probably ovarian rather than uterine in origin. At the same time he had advised abdominal exploration on account of the pressure symptoms caused by the tumour. He thought it would have been better to have punctured the tumour with a small needle such as the subcutaneous syringe, in order to determine the presence or absence of fluid, instead of using a large trocar and cannula, which caused profuse hæmorrahge in many solid tumours, and necessitated further operative procedures.

Dr. Boxall briefly mentioned a case which presented very similar characters, but the mass had sprung from the vaginal cervix. The case, both in physical characters and symptoms, pointed to the probability of retroversion of the gravid uterus. In that case the mass was dealt with from below. The body of the uterus was displaced forwards and upwards above the symphysis, and was not enlarged.

Dr. Heywood Smith suggested, with regard to what had been said in favour of exploring such tumours with a trocar, that it would be better to proceed with the operation without

puncturing, as the tumour had to be removed, and in the case of solid tumour it might give rise to troublesome hæmorrhage; and should it be cystic, it would, if there was so much doubt as to its contents on being handled, most probably have such thick walls as not tobe materially reduced in bulk, and some contents deleterious to the peritoneum might escape. He considered, therefore, that such proceeding should be omitted, as involving waste of time productive of no good.

In reply, Dr. GALTON thought that the tumour grew from the uterus higher up than the supra-vaginal cervix, and the tear in the posterior wall opened into the uterine cavity. He supported the use of the trocar as likely, if fluid were found, to obviate the necessity of enlarging the abdominal incision. He thought that owing to the conditions of growth in this case, and the binding down of the tumour, nothing offered a chance of relief but removal.

A NEW AND SPEEDY METHOD OF DILATING A RIGID OS IN PARTURITION.

By Joseph Farrar, M.D.

The new method which I beg to bring before the Society, and which I may at once confess to have discovered by accident, is as simple as it is effectual, and as painless to the patient as it is speedy and free from danger.

How frequently has the accoucheur to lament the meeting with a rigid, unyielding *os uteri*, when the boundary of the orifice is as if made of tin-plate, and almost as sharp to the finger as the edge of a knife! In some of these cases the attempts at stretching with the finger, or with a mechanical dilator, or by means of the india-rubber bags, are very disappointing; and if successful are nearly always tedious, and therefore more or less unsatisfactory, besides being painful, wearisome, and proportionately trying to the patient. Occasionally, too, each and all of these methods fail, one after the other; and then we have recourse to incisions of the boundary of the orifice, with consequent danger of *septicæmia*, and the tearing of the uterus upwards during a strong pain. Any other means, therefore, of accomplishing our object, and of fulfilling the conditions I have just put forward, will be warmly welcomed, not only by the poor suffering patient, but by the anxious and worn-out practitioner as well.

About four months ago I had one of these tedious cases to deal with. The patient was a *primipara*, and I had been in attendance, on and off, for some forty-eight hours. I had given chloral, combined, as recommended by certain

of the profession, with the bromide of potassium; also morphia, followed by most persevering attempts at digital and mechanical dilatation, with and without chloroform, but with absolutely no appreciable result. The patient being nearly worn out with violent and involuntary bearing-down pains, I decided to incise the margin, previously rendering the parts anæsthetic by the local application of cocaine. I used a 10 per cent. solution, applying it by means of a piece of linen rag, smearing it round and round on the end of the finger, and leaving it there for three or four minutes. Judge of my surprise and greater satisfaction on introducing the left index finger as a guide to the point of the scissors, to find the previously rigid *os* widely dilated, and as distensible as a rubber bag! The dilatation took place, as I said, in three or four minutes; and I could not help coming to the conclusion that mere coincidence was quite out of the question. The changed condition of matters was so sudden, and altogether so different from anything in my previous experience in such cases, that I could come to no other conclusion than that it was the cocaine which caused this rapid change.

However, before calling the attention of the profession to the matter I determined to wait for another, and if possible, a more severe case, to act as a kind of control experiment. The opportunity presented itself two months afterwards in a *primipara* of over forty years of age. The os, as in the case just mentioned, failed to yield either from internal medication or by direct digital or mechanical means. I waited three days, to give the case every chance of a natural termination; and then, all means failing, I applied the cocaine—not, I confess, without a certain feeling of anxiety as to the result. I had not long to wait, for, as in the first case, and in four minutes' time, the *os* yielded, and was so distensible that I was soon able to slip it over the child's head, and in due course to complete the delivery.

Both these cases were so striking in the results that I could hesitate no longer to bring the facts before the

profession, and to advise a trial of cocaine in cases of persistent rigid *os* arising from physiological causes.

Dr. Amand Routh thought Dr. Farrar's paper a very valuable one, but did not think his use of cocaine was quite new. In the 'British Medical Journal' for September 5th, 1885, Dr. Dabbs, of Shanklin, had drawn attention to its use as relieving the pains of the first stage of labour, and in the same journal, on December 12th, 1885, Dr. Head Moore, commenting upon this, advised the use of cocaine and boric acid pessaries, which would, he believed, "prove of use in the first stage of labour, especially in primipara and in cases of rigid os." Dr. Routh had made several trials of these "Head Moore cones," as advised, and found them so useful that he recommended them to a post-graduate class at Charing Cross Hospital in 1888, stating at the same time that he was uncertain whether the result was not due as much to the glycerine (in Dr. Dabbs' solution) and to the oleum theobromæ in Dr. Head Moore's cones) by encouraging the cervix to secrete, for it is well known that a secreting cervix is a dilatable one.

Dr. Leith Napier considered that if extended experience corroborated Dr. Farrar's observation a most valuable addition to our resources in treating rigid cervix would be found. The usual effect of chloroform narcoses in this condition was well known. Dr. Leith Napier had formerly frequently employed a 20 per cent solution of cocaine as an intra-vaginal application prior to gynæcological examinations and minor operations, but he had found this solution, which was twice the strength of that used by Dr. Farrar in his two parturient cases, most ineffective. While of course accepting the clinical facts adduced, it was very difficult to find a satisfactory explanation. A much larger number of cases and some intelligible therapeutic explanation would be very desirable.

Dr. Peter Horrocks thought that if this communication led to the establishment of the efficacy of cocaine in a rigid os, great credit would be due to Dr. Farrar. He did not think that the effect of chloroform upon muscular fibres, particularly of the involuntary type, was known. The relaxation of the sphincter ani, which was a voluntary muscle, often indicated profound anæsthesia, and hence it was a signal of danger. And yet even when this had occurred a rigid os remained rigid still. Hence he considered that chloroform was not a suitable remedy for rigid os, and that a patient would die before such an involuntary muscle had relaxed owing to the chloroform. He mentioned that painting the surface of the vulva or vagina with a 20 per cent. solution of cocaine was not nearly so good a local anæsthetic as the injection of a 5 per cent. solution under the

integuments, and he suggested that possibly injection of a weak solution of cocaine into the substance of the cervix might prove more efficacious than the mere application of a stronger solution to the surface.

The PRESIDENT said that many obstetricians had tried to make cocaine useful for lessening the pain of labour, and if cocaine had any regular effect in accelerating a normal first stage of labour, it was strange that it should not have been noticed. It was very difficult to draw a clear distinction between mere slow dilatation of the cervix, the labour being normal in every respect except speed, and dilatation arrested by some abnormal spasmodic contraction of the cervix, if such a thing existed. It was quite conceivable that a drug might have no effect on a normally, though slowly, progressing labour, and yet be able to remove the hindrance caused by a spasmodic contraction of the cervix. In Dr. Farrar's cases it seemed as if there were something more than mere slowness of normal dilatation, for in one the condition was stationary for forty-eight hours, and in the other for three days, and the dilatation occurred with wonderful rapidity. Two cases were a slender foundation on which to base a therapeutic statement, but Dr. Farrar's two cases were very remarkable ones, and if his statement based on them were confirmed by further experience he would have made a valuable addition to our obstetric resources.

Dr. FARRAR, in replying, said he felt much honoured that his paper had elicited so much discussion. He did not, however, take credit to himself for his discovery, seeing it was the result of pure accident. One gentleman had asked for some explanation as to how the drug could act in the manner claimed, but this Dr. Farrar said he did not pretend to know, and that he was therefore quite unable to give the information. What he was able to say was that it did act in the manner he had stated, and that it would take a great deal of argument to convince him to the contrary. In answering the President, who had asked what size the *os* was in each of the cases previous to applying the cocaine, Dr. Farrar said about the size of a shilling piece. Finally, he begged the Fellows to try it in such cases as he had indicated, as he himself would certainly do; and he promised that if in future trials it should prove a failure, he would duly inform them of the circumstance.

ON ATROPHY WITH COLLAPSE (CIRRHOSIS), FIBROID DEGENERATION, AND ANGIOMA OF THE OVARIES.

By James Braithwaite, M.D.Lond.,
OBSTETRIC PHYSICIAN AND SURGEON TO THE LEEDS GENERAL INFIRMARY.

(Received August 8th, 1894.)

The following paper is founded chiefly upon one case, but the conclusions come to are illustrated by, and compared with, observations upon other two cases, in which the pathological condition was the same as that present in the first so far as regards the "cirrhosis," as it has been called. This "cirrhosis," which is really a collapse and atrophy of the outer portion of the ovarian stroma, being totally different from true cirrhosis, ought not to be called by the same name. A more appropriate name would be "Sumptoma" (*σύμπτωμα*,* collapse).

This collapse and atrophy form the chief subject of this paper. Fibroid degeneration and angioma only come in incidentally because present in the ovaries in addition to the collapse. The conclusions come to upon the subjects which have been named, are such only as can be deduced from the pathological changes actually observable in the cases related, and the sections being on the table, the correctness or not of the observations can be judged of by the Fellow present. I make no reference to the somewhat scanty literature of the subject further than to say that the opinion of the profession upon it is undecided, because it has not been thoroughly worked out. The puckering is supposed to be owing to fibrosis

* Dion Cassius (fl. 180 A.D.) uses this word in his account of the collapse or falling in of the Fucine Lake.

of the ovary occurring independently of inflammation. So that cirrhosis and fibrosis would, according to this idea, necessarily go together. It will, however, be shown that there is no connection whatever between them. I may here say that sufficient attention has not been given to Wedl's* brief allusion to the disease. He puts it rightly amongst atrophies, and speaks of it as an "atrophy of the Graafian follicles." The case which first drew my attention to the subject was the following.

A. P—, aged 44, unmarried, is a thin, small, dark woman. She was a patient of Mr. Edward Atkinson's, of Leeds, with whom I saw her on November 18th, 1892. Her health was perfectly good until 1890, during which year she says that she had influenza four times. This enfeebled her a good deal, and about Christmas of that year she first noticed pain in both iliac regions. This soon increased sufficiently to be a great annoyance to her, and it was her principal complaint at the time I saw her. She described it as an "aching, always there," worse at the menstrual periods, but "bad" between them. It was made worse by twisting the body sharply to one side, and especially to the left. In the morning, before getting up, she often noticed her body a little swollen, and there was a "dull aching and, occasionally, shooting pain." Each period lasted from three to ten days, and was rather profuse. The intermenstrual intervals were very irregular, varying from fourteen days to six or seven weeks. Her appetite was not good, tongue clean, pulse poor and too quick. Her general aspect was not, however, suggestive of bad health, but she did not look strong. She had never been subject to neuroses, nor was she hysterical at all, but a matter-of-fact, pleasant, cheerful woman. There was no cause for the supervention of the pain except the one named, viz. influenza. Her circumstances and surroundings were fortunate and happy.

Abdominal examination revealed only a little supra-

* 'Wedl's Pathological Cystologes,' New Sydenham Society's edition, p. 169.

pubic tenderness to deep pressure. Vaginal and bimanual examination found the uterus normal as to position, but the fundus was enlarged and suggestive of a small fibroid. There was, however, no irregularity of outline discoverable. The fundus was large, smooth, rounded, and very tender to pressure. The ovaries could not be distinctly made out. There was no pain elicited by examination and pressure where the ovaries should be found, and it was therefore certain that they were not enlarged or painful. On the other hand, pressure upon the uterus itself was unduly painful, and we concluded that although the pain complained of was in the iliac regions, its source must be in the uterus itself. She had already, before coming to Leeds, been subjected to a good deal of medicinal and general treatment, and nothing had done the least good. As she urgently asked for relief we decided to make an exploratory incision with a view to oöphorectomy, especially as we thought it nearly certain that there was a small fibroid in the fundus. This I did at the end of November, 1892, Mr. Atkinson being present.

The fundal end of the uterus was found decidedly enlarged, but its stony hardness was almost more noticeable than its enlargement. Even when it was between the fingers, however, I could not be certain that a fibroid existed. It seemed rather a general enlargement or fibroid thickening than an encapsuled tumour.

The ovaries were brought into view without difficulty, and their appearance, especially that of the left, was very remarkable. The left was very small and nearly as white as milk, with a crenated, puckered surface. The right was a little larger and the colour more normal. Both were removed with their tubes. No unfavorable symptoms of any kind occurred, and the patient made a good recovery. Menstruation never occurred again. The old pain was felt in a modified form for at least eight months, but it then absolutely disappeared. I saw her recently, and she assured me that she is now perfectly well.

I have not since the operation had the opportunity of examining the condition of the uterus, and indeed the patient would not now submit to an examination; but as the point of the case to which I wish to draw attention is the condition of the ovaries, this absence of evidence about the present condition of the uterus is not important.

The left ovary was in an advanced state of what would be called cirrhosis.

The right ovary was a little larger, its colour was more normal. Its surface was nearly convoluted, but not quite so much as that of the left ovary.

I gave half of this ovary to the Assistant Pathologist to the Yorkshire College (Mr. J. W. Haigh), and he reports that there was in his portion a very small ossifying fibroid tumour. This was not visible externally.

In the section of the other half now shown the amount of normal stroma is seen to be much greater than in the left, and there is only one spot in which fibroid degeneration has commenced. This can be recognised by the naked eye by its lighter colour. The vascular supply of this ovary is good, and the walls of the vessels normal.

There is seen to be a space or cavity in the centre of the section, just as in the left ovary, but it is not lined by remains of yellow tissue. There can, however, be no doubt that this was present in an earlier stage. This cavity, and pre-existing cavities as they shrank, have, I think, produced the puckering or convolution of the surface.

In order to understand the question it is necessary to understand the natural history of a normal corpus luteum. The cavity of a normal corpus luteum contains a clot of blood, which in time becomes curiously glassy and transparent, but is still red in colour. As the yellow material increases in amount the clot shrinks, but there is never a considerable sized cavity or clear fluid in the interior. Ultimately the clot shrinks to a small size, the yellow material closing upon it. The corpus

luteum of A. P— differs from the normal, first, in a marked deficiency, almost absence, of the yellow matter. Second, in the absence of the clot. Whether it ever existed or not I cannot say, but there is no trace of it, and the centre of the corpus contained instead clear fluid, and exceedingly fine fibrous or cellular tissue bordering the central space. Possibly the fibrous tissue may have completely filled it, and the central portion been lost in making the section, as it was extremely delicate. The clear fluid would be more or less held in the meshes of the fine fibrous tissue.

In a corpus like this with its unsupported interior there must be a tendency to collapse. This collapse would be favoured by the small amount of normal ovarian stroma which forms the exterior of the ovary, and the same condition will be noticed in the two subsequent cases yet to be described.

Before proceeding to other conclusions, which I think may be fairly come to from an examination of these ovaries, I will introduce a second case.

On September 7th, 1893, I operated in the Leeds Infirmary upon a patient named Exley, suffering from what we supposed to be tubercular peritonitis. There turned out to be a tubercular mass involving omentum and bowel, and after letting out all the ascitic fluid, and inserting a drainage-tube, the abdominal wound was closed without any other operative proceeding except that I removed the right ovary. The left ovary was normal. Although it is not directly bearing on the subject, I may say that the patient made a good recovery, and bid fair to get quite well when we sent her home in October, 1893. This ovary, which for distinction I will call Exley's ovary, had attached to it a cyst. This cyst has nothing to do with the subject in hand, but its existence, along with the abnormal appearance of the ovary, was the cause of its removal. Exley's ovary, without the cyst, weighed only 47 grains,—a little less than A. P—'s,

which was 53 grains, and was markedly cirrhosed, but not of the white colour before described. The puckering of the external surface is more marked even than in A. P—'s ovary.

As in A. P—'s left ovary the puckering of the surface, or infolding, as it might be called, is owing to collapse from sinking in at places where corpora lutea have existed. This explanation of the weak central places which have allowed the collapse can be inferred from examination of this ovary, as it can from A. P—'s left ovary, although there is no trace of the yellow matter. What is actually seen in Exley's ovary at the places in the centre which have allowed of collapse of the external surface is what is sometimes called myxomatous change or degeneration. Whether rightly or wrongly so called, I do not feel in a position to say.

There is in the section of Exley's ovary shown, fibroid degeneration of one small portion only, viz. an outlying piece connected to the rest by a neck. This degeneration, therefore, is quite out of the way of the collapsed portions. The type of degenerative fibroid bands is a little different in appearance from that seen in A. P—'s case.

In Exley's ovary there is no hyaline fibroid degeneration of the vessels.

The next case is one of atrophy and collapse with what may be called angioma.

Case 3.—H. G—, aged 37, was admitted into the Leeds Infirmary in December, 1893. Married some years. Never pregnant. Menstruation commenced at twelve, and there was dysmenorrhœa from the beginning. When admitted, she complained of pain in both iliac and sacral regions, and stated that this had existed for fifteen years, *i. e.* from the age of twenty-two, since which time she has always been an invalid. She was in the Chelsea Hospital for Women eight years ago, under the late Dr. Aveling, probably for retroflexion, as various pessaries were used. Neither these nor any she has subsequently had, have

been of any benefit to the pain. The pain is worst during the menstrual period, which lasts three or four days, but she is not free from it during the intervals, which are from seventeen to nineteen days. During these intervals she occasionally, but rarely, has a little loss of blood. On vaginal examination there is found extreme retroversion with enlargement and tenderness of the uterus. The cervix points forwards and downwards, fundus backwards and to the left. The sound passes three inches.

Before admission I had succeeded pretty well in keeping the uterus up with a Hodge pessary, but the patient not being in the least relieved by this we admitted her for the operation of ventro-fixation of the uterus, with possible oöphorectomy if anything should be found in the ovaries to account for the pain. Bimanually the ovaries could be examined, but no enlargement was found, only extreme tenderness.

The operation was done on December 9th, 1893, and the ovaries were found of a deep purple colour, and a trifle larger than usual. The colour was very remarkable. Both ovaries and tubes were removed, and the uterus then was fixed to the peritoneum just above the pubes by two silkworm-gut sutures. This was not easily done, as it could be pulled up to the abdominal walls with difficulty. The question being the pathological condition of the ovaries, I will not further allude to the progress of the case, except to state that she recovered well, and was examined on April 5th last, and again in July, when the uterus was found in good position. The patient was not free from pelvic pain, but was very much better and improving.

The left ovary was found to consist of a mere shell of true ovarian tissue, convoluted by collapse. The greater portion of the ovary consisted of a convoluted mass of small vessels larger than capillaries, external to which there are spaces where corpora lutea have existed, and outside all, as stated, a thin shell of much-convoluted ovarian tissue. The right ovary consisted of one large

corpus luteum with a large hæmorrhagic clot in the centre. The clot is separated from the corpus luteum tissue by a space nearly surrounding it. Attached to this is a mass of vessels as in the left ovary.

This case, I think, may be called angioma of the ovary with atrophy or collapse.

In reflecting upon these cases we must remember that a certain amount of convolution of the surface of the ovary is normal. Even in the ovary of a virgin of sixteen or eighteen there is a little puckering of the surface. There is, however, remarkably little even in healthy multiparous ovaries, still there is some, and it is therefore only an excessive degree which is noticeable. This collapse in all three cases is associated, as I have before said, with atrophy, more or less, of the true ovarian stroma.

In all the three cases there was a debilitating first cause. Influenza in the first, tuberculosis in the second, and primitive dysmenorrhœa and subsequent incurable retroflexion in the third. The collapse of the surface is, therefore, not the primary disease, but is an effect or consequence of deficient and feeble reparative power.

The fibroid degeneration, which was co-existent with the collapse, is evidently not the cause of it; indeed, the surface at the parts where the fibrosis exists is rather convex and swollen. The outlying portion of Exley's ovary appears also to show that this change may even cause a small outgrowth.

We may, however, surmise that the same debilitating causes which produce defective repair and collapse have been in operation to change the higher grade ovarian stroma into the lower grade fibrous tissue.

It is evident that simple deficiency in the amount of blood circulating in the ovary is not the cause of the atrophy, for it is very marked in Glover's ovary along with a purple colour, from excessive amount of blood. Vital power is, to a great extent, independent of the actual

amount of blood, either in a woman as a whole, or in her ovary alone.

On examining microscopically a healthy multiparous ovary in old age it is found that there is a tendency, but only a tendency, to fibroid degeneration of the true ovarian stroma, but the greater part of it is the same as in health during the menstrual period of life. Fibroid degeneration of the ovary in middle age can hardly, therefore, be called an early occurrence of the changes incidental to old age.

This fibroid degeneration, also the hyaline fibroid degeneration of the vessels, and the angioma, may, however, be said to be exaggerated conditions of what may occur normally in a senile ovary.

The number of vessels seen in the section of the posterior half of the senile ovary somewhat resembles what I have ventured to call angioma in Glover's ovary, and there is also hyaline fibroid thickening of some of the vessels.

Although it is outside the subjects of this paper, as the section of the senile ovary is on the table, it is worth while noticing what a large amount of corpus luteum tissue there is in it, indicating by no means a simple passive existence.

The PRESIDENT said that Dr. Braithwaite's paper dealt with an important subject. Many cases had been reported in which ovaries had been removed because they were painful; and the cause of the pain was said to be that they were "cirrhotic,"—that is, small, puckered with few follicles and much fibrous tissue. Dr. Braithwaite's case differed from these only in being much more fully and carefully reported than the majority of them. Now, as to size, puckering, number of follicles, and amount of fibrous tissue, healthy ovaries varied very much. He (the President) knew of no observations as to the limits between which healthy ovaries might vary in size and weight. He knew of no criteria by which, if two small puckered ovaries, one taken from a patient on account of pain, the other from a patient who had no pain, were put side by side on a plate, the ovary which was painful could be identified; nor did he know any author who had attempted to describe any such criteria.

Mr. Targett said that he had recently examined a pair of ovaries in which the curious folding of the serous surface, resembling the convolutions of the brain, was even more marked than in the specimens shown by Dr. Braithwaite. Microscopical examination revealed an advanced degree of chronic endarteritis not of a syphilitic type; the lumen of the vessel in some instances was almost obliterated. He was of opinion that the glandular atrophy and fibroid degeneration in the organ might be due to the presence of this vascular lesion.

Dr. Leith Napier mentioned that there was a considerable amount of recent literature regarding the pathology of cirrhosis of the ovary. Stephen Bonnet and Paul Petit, in their work 'Traité pratique de Gynécologie' (Paris, 1894), had devoted considerable attention to it. Petit, Gusserow, Nagel, and others might be referred to as having made independent investigations on the subject.

Mr. Malcolm said that the ovaries referred to by Mr. Targett were removed in the course of an ovariotomy, and not for pain. One of them was attached to a large ovarian cyst, but the form of the ovary was quite distinct except at its junction with the tumour. The other ovary showed an extreme degree of corrugation of the surface.

NOTE ON THE IMPORTANCE OF A DECIDUAL CAST AS EVIDENCE OF EXTRA-UTERINE GESTATION.

By Walter S. A. Griffith, M.D.

(Received August 21st, 1894.)

E. J—, aged 25, married two years, no previous pregnancy, husband living, admitted St. Bartholomew's Hospital July 30th, 1893. Family history nothing important. Previous health good. She is a stout, robust woman. Menstruation began at fourteen, always regular, duration three days, interval twenty-five days, quantity average. The last regular period ceased on April 17th, 1893. Fourteen days after, on May 2nd, there was a slight loss of blood; menstruation since absent (3½ months). She believed herself to be pregnant. The patient came to the hospital on July 30th, unable to pass her water, and complaining of a brownish discharge which had commenced on the previous day. The urine was drawn off, and a large uterine cast was found and removed from the vagina. No cause for the retention of urine was discovered.

She was admitted into the hospital on the suspicion that she was suffering from extra-uterine pregnancy which had not yet ruptured. She had suffered from morning sickness lately, the breasts were said to be increasing in size and showed signs of activity. There was no history nor symptom of rupture of a gestation sac.

The examination of the pelvic organs was difficult owing to her large size and the amount of fat in the abdominal walls; it was therefore made under an

anæsthetic. The uterus was a little enlarged, measuring $2\frac{3}{4}$ inches, but no tumour was found in its neighbourhood.

Description of the decidual cast.—The cast appears to be identical with those found in cases of extra-uterine gestation. It is triangular in shape, $2\frac{1}{2}$ inches in length by 2 inches in breadth, and very thick. The inner surfaces are smooth and present numerous orifices of glands and depressions, but there are no traces of chorionic villi, nor any indication that there ever have been any. The outer surfaces are rough with papillary elevations, each papilla, being about the size of a grain of wheat, is attached by one extremity to the superficial part of the decidua, and projects obliquely from it.

Under the microscope the decidua is seen to be composed of the characteristic nucleated epithelioid cells of various sizes, with numerous leucocyte-like cells interspersed. Blood-vessels are fairly numerous but are not very large. Each papilla examined contains a considerable cavity, which opens by a much smaller orifice on to the surface.

This structure resembles all the specimens of uterine decidua in cases of extra-uterine gestation which I have examined, and closely the decidua vera of intra-uterine pregnancy, though in the latter I have only met with these papillary projections in much smaller numbers.

I had the advantage of Mr. Bruce Clarke's assistance when the examination under the anæsthetic was made, but we were unable to arrive at a positive diagnosis; we had very strong evidence of pregnancy in the amenorrhœa of three months' duration, the presence of morning sickness, and the enlargement of the breasts; we had the strongest possible evidence that the pregnancy was not intra-uterine in the characters of the cast; but, on the other hand, we were unable to find any evidence of an extra-uterine tumour. We therefore decided to place the facts before the patient, who was an intelligent woman, and leave to her decision the question of an exploratory operation. We pointed out that the risk of such an

operation was in our opinion not greater than she might fairly meet to have so important a matter decided, and she agreed to it without hesitation.

On August 1st this was done by Mr. Bruce Clarke. We made a careful examination of the pelvis and tubes, and found no evidence whatever of extra-uterine gestation.

There is nothing to record in the after history of the case; her recovery was slightly interrupted by suppuration in the lowest part of the deep wound in the thick layer of fat.

The importance of this case is very great, for it appears to prove the unreliability of one of the most characteristic phenomena of extra-uterine pregnancy for the purposes of diagnosis. Some of us at least have looked upon the extrusion of such a decidua as absolutely indicative of extra-uterine gestation, and I know of no previous evidence contrary to this. This question, then, needs consideration: What are these decidual casts, and under what conditions are they formed?

It is not a little remarkable that in spite of the great attention which has been given of recent years to the whole subject of extra-uterine gestation, so little has been devoted to this point; while some authors, Charpentier and Winckel, for instance, refer to it in some detail (Winckel regarding the decidua as diagnostic); others merely mention it as an occasional symptom, and some do not even refer to it.

Decidual casts from the uterus are known to occur under three distinct conditions: (1) as menstrual exfoliations in the condition known as dysmenorrhœa membranacea; (2) in extra-uterine gestation; and (3) from the non-gravid horn of a double uterus. I have examined several specimens from the first and second of these in cases the diagnosis of which was placed beyond doubt.

The characters of the different casts are quite distinct both to the unaided eye and histologically.

The menstrual decidua is rarely shed entire; most

frequently that from the anterior and posterior walls are torn apart, owing probably to their extreme thinness. It is often shed in several small fragments.

When placed together, the fragments form a triangular, very thin and translucent sac, measuring from an inch to an inch and a quarter in length and width. Microscopical sections exhibit the structure presented by the normal menstruating mucous membrane of the uterus in the early stage, namely, the uterine glands embedded in the loose connective tissue, the surface covered by a single layer of columnar epithelium. In places the epithelium and subepithelial connective tissue have been lacerated by the bursting of the superficial blood-vessels, and in the deeper parts extravasations of blood are seen due to the same cause. There is no development at any part of the large epithelioid cells so characteristic of pregnancy decidua.

This is not the place to discuss the ætiology of this deviation from the changes which occur in normal menstruation, but it appears to me that the cause of the great differences of opinion that have been expressed as to the minute structure of dysmenorrhœal membranes by different observers depends on the fact that insufficient care has been taken in selecting the membranes for examination; one takes a piece of blood-clot and naturally finds it to be composed of fibrin, another obtains his specimen from a woman who has lately been confined or has aborted, and finds the characteristic decidual cells, while a third examines a specimen from a case complicated by endometritis. I have had opportunities for examining all these, but my own opinion is based on the examination of specimens passed by women, married and single, who had never been pregnant, and whose only pelvic trouble was their dysmenorrhœa, and in the case of the married women of sterility. Such uncomplicated cases should alone be taken in the first place for study, and the others added as variations, not as characteristic types.

In such cases I have never seen any more evidence of inflammation than is seen in perfectly normal menstruation,—that is to say, none at all. The specimens shown are from such cases uncomplicated by treatment.

The decidua from the uterus in cases of extra-uterine pregnancy is easily distinguishable from menstrual decidua, owing to its large size and great thickness. Microscopic sections show that the uterine mucous membrane with its glands and surface epithelium is entirely replaced by the characteristic decidua of pregnancy which has not come into relation with the fœtal chorion.

The decidua from one horn of a double uterus, the other horn being pregnant, is again easily distinguishable from the others by its shape, which of course corresponds with the shape of the cavity of the cornu. The cornu in such cases is nearly cylindrical, the fundus being no wider than the cervical end, and the oviduct springs from the centre of the fundal extremity instead of from the side, as in a normal uterus. The decidual cast, therefore, is nearly cylindrical—pencil-shaped instead of triangular.

Much more closely resembling the decidua of extra-uterine gestation is the decidua vera of a normal pregnancy, but this is not likely to be shed by itself except in cases of imperfect abortion, the ovum and the other membranes having been extruded previously; but, of course, evidence of this may not easily be obtained.

This case appears to be capable of explanation in one of two ways: either the uterus can develop the decidua which we have believed to be the result only of fertilisation of an ovum, without this stimulus; or, as appears to me to be less improbable, a fertilised ovum may have provided the necessary stimulus, either inside or outside the uterine cavity, and if within the uterus it has failed to attach itself to it, or even to initiate the differentiation of the decidua which should immediately follow the entrance of the ovum; if external to the uterine cavity the ovum has so completely disappeared as to leave no trace of its situation behind it.

It does not appear necessary, until further evidence is obtained, that we should alter our opinion as to the value of this phenomenon in cases of suspected extra-uterine gestation, further than to regard it as evidence of the highest value instead of as conclusive.

Dr. Remfry inquired if the size of the uterus had been ascertained by passing a sound immediately after the expulsion of the decidua, as the evidence thus afforded would have an important bearing on the diagnosis of the case.

Dr. Leith Napier expressed the hope that the microscopical specimens shown might be figured in colours in the 'Transactions.' They aided greatly in supporting the author's observations, and being arranged in due sequence were most instructive.

DECEMBER 5TH, 1894.

G. ERNEST HERMAN, M.B., President, in the Chair.

Present—64 Fellows and 10 visitors.

Books were presented by the Edinburgh Obstetrical Society, the Clinical Society of London, the Johns Hopkins Hospital, St. Thomas's Hospital, and the Medical Society of London.

Herbert James Ilott, M.D.Aber.; William A. Stott, M.R.C.S.; T. Vere Nicoll, L.R.C.P.Lond.; and C. R. M. Green, L.R.C.P.Lond., were admitted Fellows.

The following gentlemen were elected Fellows of the Society:—H. Bellamy Gardner, M.R.C.S.; R. W. Johnstone, M.D., B.Ch.; Robert Thomas Alexander O'Callaghan, F.R.C.S.I.; Herbert Edward Rayner, F.R.C.S.

The following gentlemen were proposed for election:—Samuel Ruddell Collier, M.D.; John Curtis Webb, B.A.Cantab.

CURIOUS CONGENITAL DEFORMITY.

By C. H. ROBERTS, M.D.

DR. ROBERTS showed a case of curious congenital deformity in a female child of three months old, illustrating the so-called intra-uterine amputation of limbs.

The child, which seemed perfectly well otherwise, was the fifth child of a German woman; she had no other children deformed. Her confinement was easy, no instruments were used. No history of deficiency of the liquor amnii could be obtained. The cord was not round the limbs. The mother was "frightened" by a burglar when two months pregnant. The child exhibited most marked deformities of the limbs, particularly on the left side, especially the left lower extremity. There was no deformity of lips, palate, neck, arms, back, or genitals. No congenital heart disease nor any transposition of viscera.

The left forearm near the wrist exhibited a curious constriction. The three middle fingers of the left hand were stunted and webbed into one thick triangular finger.

The left lower extremity was natural to the knee, below which was a curious shapeless mass of flesh three inches long, with three definite constrictions, containing only bone at its upper part. Lowest of all on this fleshy mass were five tiny outgrowths like toes. The child could move this, and the knee-joint was natural.

The right lower extremity was natural to the knee; the leg just above the ankle was markedly constricted, as if a cord had been tied tightly round it. The foot was natural, but two toes were curiously webbed.

Dr. Roberts thought it might interest some of the members of the Society as regards pathology and the question of congenital deformity caused by intra-uterine amniotic bands, or whether this was not a case simply of faulty development. He also wished for advice as to later treatment.

The PRESIDENT (Dr. Herman) thought the case one of intra-uterine amputation by amniotic bands, and asked Dr. Roberts as to the amount of liquor amnii.

Dr. ROBERTS said that he rather leaned to the theory of faulty development. He was unable to inform Dr. Herman as to the question of deficient liquor amnii in this case.

The PRESIDENT thought that constriction by amniotic bands, from deficiency of amniotic fluid was the most reasonable expla-

nation of deformities such as those present in the infant exhibited by Dr. Roberts.

Dr. Griffith said that Dr. Lancereaux in a clinical lecture ('Medical Weekly,' October 5th, 1894, p. 481) had put forward an explanation of these cases which appeared to be much more probable than any former theory, namely, that the disease, which he described as "autocopic tropho-neurosis," was a disease of nerve-trunks.

RUPTURED TUBAL PREGNANCY.

By W. Atkinson Stott, M.R.C.S.

The specimen is one of tubal pregnancy which ruptured during the thirteenth week.

It consists of Fallopian tube with ovary and part of the broad ligament. The tube is distended in the middle portion the size of a hen's egg, and the upper surface shows a T-shaped rent, and its cavity the contained gestation sac. A separate nipple-shaped portion of the latter occurred free. Both the abdominal and uterine extremities of the tube are patent.

It was removed a fortnight ago, twenty-seven hours after sudden onset of peritoneal hæmorrhage from the patient, who was almost moribund.

The peritoneum contained almost three pints of blood. The patient is now rapidly recovering.

FIBROMA OF OVARY.

By Montague Handfield Jones, M.D.

HYDATIDS IN THE BONY PELVIS.

(With Plates.)

By J. H. Targett, F.R.C.S.

(*Abstract.*)

Mr. Targett gave a demonstration on hydatid disease of the pelvis, illustrating his remarks by a large number of lantern slides. The consideration was limited to examples of the disease as it affects the bones of the pelvis, and all cases of hydatids in the soft tissues of the pelvic cavity were excluded. After classifying the specimens as those of primary disease in the os innominatum or sacrum, and as those due to extension from the spinal column or femur, it was pointed out that the lesion was characterised by a wide-spread destruction of the interior of the os innominatum, and separation of its compact lamellæ. As the ilium was usually first affected, these morbid changes resulted in the formation of a large cavity with thin bony walls, in which were many perforations. The contents of the cavity comprised pus, hydatid cysts, and spongy sequestra derived from the necrosed cancellous tissue. By the apertures in the walls much of the contents of the cavity escaped beneath and among the muscles attached to the pelvis, thus forming large swellings in the groin, buttock, thigh, or iliac fossa. Such tumours had the clinical features of large chronic abscesses; they were generally painless, perhaps inconvenient on account of their size, and some had been found to be partially reducible. In the later stages of the disease the destruction involved all parts of the bone, and in a large proportion of the cases the acetabulum was laid open, and the upper end of the femur attacked.

Photographs were shown representing one half of the pelvis so completely destroyed that only irregular fragments of the os

DESCRIPTION OF PLATES VI AND VII,

Illustrating Mr. Targett's paper on Hydatids in the Bony Pelvis.

Fig. 1 (Stanley). External aspect of right half of pelvis, showing excavation of the ilium, and a large aperture in the acetabulum.

a. Head of femur.
b. Posterior spine of iliac crest.
c. Side view of sacrum.

Fig. 2. Internal aspect of same preparation. There is a wide cavity in the front of sacrum.

Fig. 3 (Réczey). Pelvis after maceration. Right side destroyed.

a. The porous head of the femur.
b. Wire on which the fragments are strung.
c. Soft parts which still hold the head of the femur in place.

Fig. 4. The upper end of the right femur showing the fractured surface. The cancellous tissue of the shaft is much excavated.

Fig. 5 (Viertel). Pelvis with last three lumbar vertebræ and upper ends of femora after maceration.

A. Posterior end of iliac crest.
B. Remains of floor of acetabulum.
C. Right ischiatic spine.
S. Symphysis pubis.
a, *b*. Articular surfaces on ilium for femur.
a, *b*. Articular surfaces on femur.
Tm. Trochanter major.
Tmin. Trochanter minor.
K. Upper end of cervix femoris.

Fig. 1.

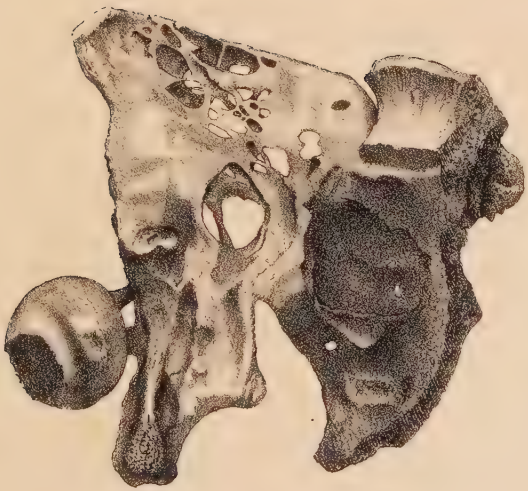


Fig. 2.

West, Newman lith.

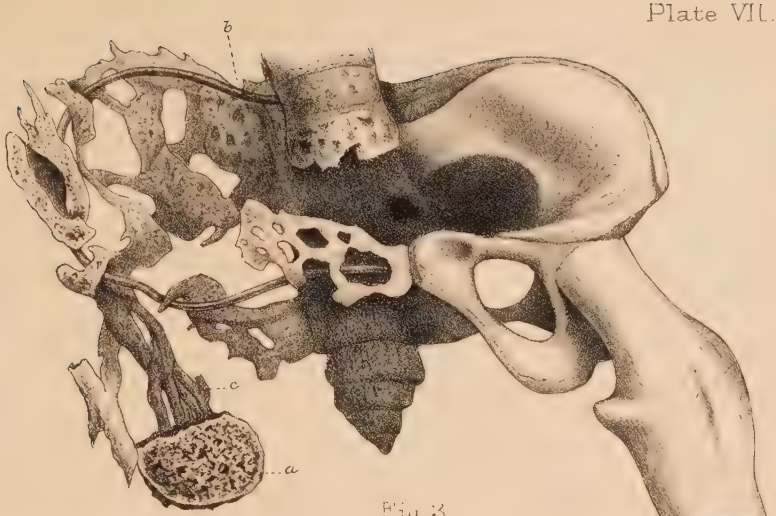


Fig. 3.

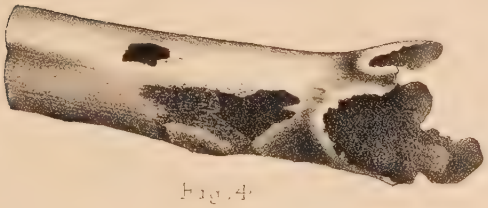


Fig. 4.

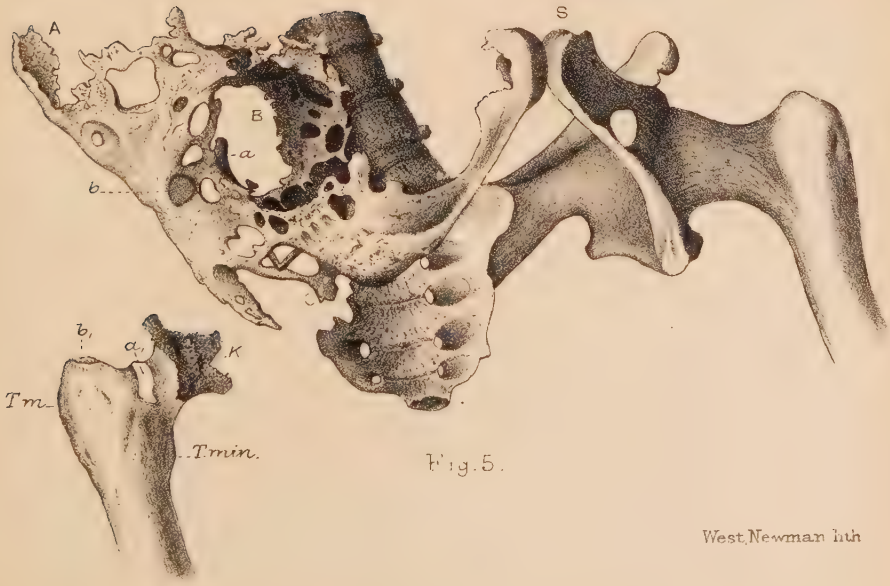


Fig. 5.

West, Newman lith

innominatum persisted, and in consequence the extremity of the femur had passed inwards as far as the front of the sacrum, thus causing very marked shortening of the thigh. There was little or no evidence of compression of the pelvic viscera by the hydatid swellings, and no case of dystocia from this cause had been recorded. In this respect hydatids of the pelvic bones differed most markedly from those developed in the soft tissues of the pelvis. The very high rate of mortality which had attended the operative treatment of these swellings was mentioned. Out of fifteen cases twelve died, and the cause of death in almost every instance was septic absorption. In conclusion, the mode in which disease extended from the spinal column on the one hand, or from the femur on the other, was fully described and illustrated.

The development of hydatids in the human skeleton is a very rare occurrence. Some seventy-six cases only have been placed on record, and these include examples from almost every part of the skeleton. Out of this small number of cases, however, the bony pelvis absorbs a comparatively large share, for there are twelve instances in which the os innominatum was the primary seat of the disease, and three which may be referred to the sacrum. Putting these together it follows that in one fifth of the total number of cases of hydatids in the osseous system the bones forming the pelvis were the parts first affected. It must be clearly understood that hydatid cysts originating in the soft tissues of the pelvis are entirely excluded from the subject now under consideration, as they have a different life-history and present totally different clinical symptoms. Beside the formation of hydatids in the os innominatum or sacrum, as the case may be, there are two other modes in which the bony pelvis may become affected, viz. by extension of the disease from the spinal column, or from the femur. The cases here recorded are, therefore, classified as (*a*) Primary Hydatid Disease of Os Innominatum; (*b*) Primary Hydatid Disease of Sacrum; (*c*) Hydatids of Spine invading Pelvis:

(*d*) Hydatids of Femur invading Pelvis. The phrase "hydatid disease," as here employed, denotes the changes wrought in the substance of the affected bone by the growth and reproduction of the hydatid cyst derived from the embryo of the tænia echinococcus. A full account of those changes as met with in the long bones of the extremities will be found elsewhere,* and need not be repeated. Suffice it that three stages of this disease are described —firstly, infiltration of the cancellous tissue with minute hydatids, which multiply by budding from the exterior of the cysts; secondly, excavation by gradual absorption of the osseous septa and consequent enlargement of the cancellous spaces; and thirdly, suppuration, which results in a more rapid destruction of the cancellous tissue, and in the formation of spongy sequestra and external swellings. When suppuration has supervened its effects overshadow those due to the growth of the hydatids, and to a large extent change the nature of the lesion; so that while the initial stages of the disease are insidious and of long duration, the formation of pus in the affected bone with its well-known burrowing tendencies is not slow to declare itself. As a matter of fact the disease has usually come under observation in this suppurative stage, and in the following cases it will be noted that all those primary in the pelvic bones presented without exception some swelling external to the affected bone which was recognisable clinically. In short the consideration of these clinical histories may be said to resolve itself into an account of the characters of certain chronic purulent swellings attached to the bones of the pelvis.

Before dealing with the morbid anatomy and symptoms of this disease, a few remarks on its etiology will not be out of place. Neither sex nor age would seem to have any influence upon it. The youngest patient among the primary series was twenty-three, and the oldest sixty-three. But hydatids in other parts of the skeleton have been met with in childhood, and in Case 19 the disease existed

* 'Guy's Hosp. Rep.,' vol. l, p. 309.

at the age of ten. How the echinococcus embryo is introduced into the body, whether by certain articles of diet, frequent contact with dogs, or uncleanly habits, is not definitely known. When once it has reached the circulation it is of interest to inquire what determines its deposition in the osseous system. Has injury anything to do with it? Of the fifteen cases in only three was the disease attributed to a local injury, such as a bruise from a fall. In Case 9 the patient fell from his horse and received a severe contusion on the hip, from which he never completely recovered; and when seen two and a half years afterwards he presented the symptoms of advanced hip disease on the injured side. In Case 5 the injury was received nineteen years before the patient came under observation; yet throughout that long period of time there had been pain and some swelling. It is stated that the prominent hip-bones of the ox, exposed to blows and injuries of various kinds, are not uncommonly affected. A good example of the kind is preserved in the College of Surgeons Museum (No. 1698).* Evidence of injury derived from the histories of cases in which the long bones were affected is equally inconclusive, though it may be truly said that those bones which are most exposed to traumatism have been most often affected. Hence it is probable that injury has some influence in determining the site at which the hydatid becomes deposited in the osseous system.

Morbid Anatomy.

1. *The changes in the bones.*—Among the twelve cases of primary disease in the os innominatum, the iliac portion of the bone was invaded in all but one, and in ten instances it was the chief seat of the affection. The large proportion of cancellous tissue here accounts for this frequency, and the same explanation would apply to the upper end of the tibia, the humerus, and the femur,

* See 'Guy's Hosp. Rep.,' vol. l, p. 335.

which are the parts commonly selected from the bones of the extremities. By the destruction of its interior and the separation of the two lamellæ of compact tissue the ilium is converted into a thin-walled sac which bulges on both external and internal surfaces of the bone. The wall of this sac is composed of a thin layer of bone crepitating on pressure, or merely an imperfect capsule of bone having large irregular perforations in it; sometimes the osseous tissue entirely disappears, and the adjacent soft parts are thickened and form a limiting membrane. The contents of the hydatid cavity in the bone comprise a variable quantity of serous or purulent fluid, numerous hydatid cysts, and spongy sequestra the interstices of which are filled with budding cysts. From the ilium the process of excavation advances into the body of the ischium, lays open the acetabulum, and may eventually reach the horizontal ramus and body of the pubes. In Case 7 the os pubis was the original seat of the disease, and the ilium was not affected. In the pubes as well as in the ischium the growth of the hydatids produces irregular excavations with wide mouths facing towards the pelvic cavity. Owing to the structure of the bones they are not expanded into osseous sacs like the ilium. In no instance has the hydatid cavity been lined with a mother cyst-wall; when a lining membrane has been observed there was good evidence to show that it was of a pyogenic nature and that the contents of the cavity were purulent.

2. *The perforation of the acetabulum.*—One of the most striking anatomical facts connected with the occurrence of hydatids in the bony pelvis is the frequency with which the acetabulum is penetrated. It was met with in nine out of the twelve instances of primary disease of the hip-bone. The degree of perforation varied from a small aperture in the iliac or pubic segment to a destruction so complete that the acetabulum formed part of a large sac replacing much of the hip-bone, or was entirely unrecognisable. To this invasion of the acetabulum several of the im-

portant clinical symptoms may be referred. But though the acetabulum was severely affected, the changes in the head of the femur were much less marked. In Case 4 it was practically normal ; in three other instances it was described as carious, while in Cases 10 and 11, where the destruction of the pelvis had reached its greatest limit, the head of the femur had disappeared and the cervix femoris was infiltrated with hydatids. Where a wide perforation in the acetabulum existed, the upper end of the femur was subjected to a remarkable displacement. When the aperture occupied the floor of the acetabulum, the femur was thrust into the pelvic cavity as far as the small trochanter ; and when it communicated with a large sac in the ilium, the extremity of the femur was inserted between the osseous lamellæ, and even reached the level of the first two anterior sacral foramina on that side. In consequence of this dislocation considerable shortening of the affected limb resulted.

3. *Extension to the sacrum.*—In four preparations disease was found in the sacrum as well as in the os innominatum, but in all of these the primary seat was undoubtedly in the latter. Two large excavations were found in the anterior surface of the sacrum in Case 4, and careful dissection showed the probable tracks by which disease had extended from the ilium to the sacrum. In doing so it appeared to have avoided the sacro-iliac synchondrosis after the manner in which cartilage is known to resist the invasion of new growths. Similarly in Case 1 the synchondrosis was exposed but not attacked. However, from the description of the preparation in Case 9, it would seem that this joint eventually succumbs, and the destruction of the sacrum with perhaps the adjacent lumbar vertebræ is then extensive. The possibility of a focus of disease in the sacrum which is entirely separate from that in the os innominatum must be borne in mind. Such a condition has been described in certain of the long bones, but the evidence in favour of this occurrence is not very satisfactory.

The peculiarities in the effects of hydatids upon the sacrum depend for their importance on the relations of the bone. Being largely composed of cancellous tissue, the sacrum is readily excavated, and by means of its numerous foramina, disease extends without difficulty to the spinal canal, to the vertebral groove posteriorly, and towards the pelvic cavity in front. Through the posterior sacral foramina hydatids find their way into the erector spinæ muscles, or form a swelling on the back of the sacrum (Cases 4, 9, 13, 14, and 15). The effect of hydatids extending into the spinal canal and coming into relation with the cauda equina is less marked than might be expected, for in only one of the five cases just quoted was there evidence of compression of the nerves, viz. severe sciatica ending in paraplegia (Case 14). If the sacral swelling protrudes forwards towards the pelvic cavity, its presence may be detected through the rectum or vagina, as in Cases 14 and 15. Under such circumstances the possibility of pressure being exerted upon the rectum or other of the pelvic viscera must not be overlooked.

4. *Formation of swellings on the bones.*—As already pointed out, this is a very characteristic feature of the disease, for it was present in each of the fifteen cases now under consideration. Two points demand attention : firstly, the seat of the swelling, and secondly, its physical signs. It must be understood that this swelling, which is recognisable clinically, is the result of perforation of the wall of the hydatid cavity in the bone and extravasation of its contents ; moreover, it is chiefly due to the occurrence of suppuration in the cavity. That some swelling of the ilium may be produced by the bulging outwards of its compact lamellæ, either towards the buttock or the iliac fossa, is certainly true, and is described in some of the following cases. But this can hardly occur in other parts of the bony pelvis, and is not likely to be very conspicuous in any region. Since the iliac portion of the os innominatum is most commonly affected, it is natural to suppose that the external swelling will usually be related to that bone.

In six instances it was found upon the buttock, the fluid having burrowed outwards from the ilium beneath the gluteus maximus. Thence it extended over the back of the sacrum, or was conducted by the gluteus to the outer surface of the thigh. When the hydatid cysts and pus become effused among the muscles of such parts as the buttock and inner side of thigh, the soft tissues soon become riddled with abscesses (see Cases 5 and 19). If extension from the ilium takes place inwards, the swelling is either limited to the iliac fossa, or appears in the groin by following the course of the ilio-psoas muscle. The groin is therefore the next most frequent site of the swelling. In the cases (7 and 10) where the pubes was much destroyed, the swelling occupied the inner end of the groin and the adjacent portion of the thigh; or was situated in the abdominal wall, having burrowed upwards between the muscles and the peritoneum halfway towards the umbilicus; or again, the abscess extended from behind the pubes through the obturator foramen to the upper third of the thigh. It will be observed that these modes of extension of the hydatid swelling are along lines which are familiar as the course taken by pus from hip disease and other suppurative infections of the pelvis. Protrusion of the swelling into the cavity of the true pelvis does not seem to be a frequent occurrence. In Case 8 a hard intra-pelvic swelling was detected *per rectum* upon the inner surface of the acetabulum; and in Case 10, where the hip-bone was extensively diseased, the pelvic cavity had become contracted in certain diameters. Yet as a rule hydatids in the bony pelvis cause little or no encroachment upon its cavity, hence they do not lead to visceral obstruction. Thus they may be sharply distinguished from hydatid cysts originating in the soft tissues of the pelvis.

The physical signs of the hydatid swelling most nearly resemble those of a cold abscess. They are usually painless, without redness or heat, distinctly fluctuating, and exceedingly chronic. The outline of the swelling is

not very distinct from the abundance of flesh about the pelvis, but in Case 4 the swelling is described as "globular and somewhat pendulous." Where two or more swellings existed at the same time, it was noted that an inter-communication was present, for fluid could be forced from the one to the other. In like manner the swelling may be more or less reducible, the fluid being driven back into the cavity within the bone. By this means the outline of the expanded bone may be felt, and crepitus obtained by pressure on its thin osseous wall. A hydatid thrill has also been described. The fluid obtained by puncture of the swelling will vary in character according to the admixture with pus. If the latter is absent, the material will resemble the typical hydatid fluid. In two respects, however, it differs from that obtained from a visceral hydatid cyst, viz. in the absence of hooklets, and in the presence of exogenously budding capsules. In Case 2 hooklets were found, and they have been described in a few specimens from other parts of the skeleton. But their occurrence must be regarded as exceptional.

Symptoms and Treatment.

In the earlier stages of the affection no definite symptoms are recognised. But where the osseous changes have been attributed to a preceding injury, the clinical history of the case describes a prolonged weakness and deep-seated pain in the injured part. In one instance the pain is mentioned as tearing and boring in character. With the onset of the hydatid swelling upon the bone, the existence of some disease is indicated, and it is in this stage that the case comes under observation. It is interesting to observe that out of the twelve cases of primary hydatid disease of the hip-bone, no less than six were diagnosed as chronic abscess probably due to disease of the hip-joint, and in some of these cases the patients presented the deformity and position of limb commonly seen in hip disease. But in spite of this strong general

resemblance, there are certain features which are important for differential diagnosis. Shortening of the limb when present is excessive, because it is due to perforation of the acetabulum and protrusion of the femur into the pelvis. The painlessness in the later stages of the disease is noteworthy, and unlike coxitis; in several instances the patients were able to get about with no more inconvenience than what was caused mechanically by the presence of large hydatid swellings about the pelvis. A characteristic symptom of hydatid disease in a long bone is the occurrence of a spontaneous fracture followed by a swelling at the seat of injury—the order of events being the reverse of that met with in malignant disease. Obviously such a symptom cannot apply to the pelvis, though in Case 11 a spontaneous fracture of the cervix femoris took place shortly before death. When a hard swelling is found upon the iliac fossa, typical egg-shell crackling may be elicited, and the sign indicates a thin bony wall to the swelling. Externally it is less likely to be recognised, owing to the thick covering of soft tissues.

It will be seen, then, that there are no very characteristic indications of the existence of hydatids in the bones of the pelvis, apart from the results of an exploratory operation. The rarity of the disease likewise makes a correct diagnosis improbable. The most important indications may be thus summarised:

a. The presence of swellings in the buttock, groin, or thigh having the characters above detailed.

b. In the majority of the cases there is a general resemblance to disease of the hip-joint; less frequently sacro-iliac disease or chronic periosteal abscess of the ilium is simulated.

c. No evidence of interference with the functions of the pelvic viscera; in advanced cases, however, the pelvic cavity is likely to become distorted in consequence of the extensive destruction of bone.

d. The nature of the fluid obtained by puncture of the swellings, or spontaneous rupture; especially as regards

the presence of budding hydatids and sequestra of cancellous bone.

As regards treatment it is very necessary to point out the high mortality of this disease. With the exception of Cases 5 and 6 all the fifteen cases of hydatids primarily in the os innominatum and sacrum were submitted to surgical treatment, and twelve of the fifteen died, while three recovered. Without attempting an exact analysis of the cause of death in each instance, it may be said that the great majority died of pyæmia, or more rapidly from septic absorption. The importance of strict antisepsis in dealing with large hydatid swellings, such as we have described above, will be readily admitted. The line of treatment which led to a successful issue in Cases 2, 3, and 15 was free incision and thorough evacuation of the hydatid swellings; and it is interesting to note that in Cases 2 and 3 operation was followed by definite symptoms of septic absorption, though recovery ensued. The difficulty which is experienced in the complete removal of the minute cysts from the cavities in the bones is shown by the necessity for a repetition of the operation in so many instances. When the cavity can be reached it should be thoroughly laid open, its interior well scraped, and adequate drainage provided. Large deeply-placed cavities or sacs attached to the inner surface of the hip-bone might be treated by Bond's method, which consists in careful removal of the contents of the sac and application of iodoform to the interior, the opening in the sac being left unclosed. Complete enucleation of the sac from the soft parts, where it can be effected, offers the best chance of a speedy cure.

A. Primary Hydatid Disease of Os Innominatum.

Case 1 (St. George's Hosp. Museum, No. 14 B).—A butcher, aged 59, was admitted to the hospital for a discharging sinus in the right thigh. Sixteen months pre-

viously a swelling appeared on the back of the thigh, which gradually increased, and ultimately burst about three months before admission. The sinus was situated 4 inches below the great trochanter, and discharged an abundance of pus. When freely laid open several pieces of necrosed bone were removed. The skin over the sacrum and the back of the ilium was found to be much undermined. Death occurred from pneumonia nearly four weeks after admission.

Autopsy.—There was a cavity in the ilium which contained a little thin pus, many hydatid cysts and small sequestra. Through a perforation in the posterior wall of the cavity numerous hydatids had passed into the vertebral groove and were lying among the deep muscles of the back.

Description of the specimen ('Guy's Hospital Rep.,' vol. l, p. 337).—Within the ilium there is a disc-shaped cavity measuring 3 inches in diameter, formed by separation of the two tables of the ilium and excavation of the intervening cancellous tissue. This space reaches upwards to the crest and backwards to the posterior spines of the ilium, while anteriorly it is bounded by a vertical line through the apex of the great sacro-sciatic notch. Its superficial wall is formed of a thin fenestrated shell of compact tissue, while on its deep surface the cartilage of the sacro-iliac joint is exposed. One half of the cavity has been emptied of its contents, and here a thin lining of pyogenic membrane is visible. The remainder of the space is packed with necrosed and partially detached spongy bone, saturated, so to speak, with minute hydatid cysts and pus. There are three large and several small fenestræ in the external wall of the space, and pus was probably discharged through them into the tissues beneath the glutei muscles. Another perforation at the posterior superior iliac spine opens into the vertebral groove beneath the erector spinæ muscles, and near by, lying upon the arches of the last two lumbar vertebræ, is a smooth-walled multilocular cavity containing a few shrivelled hydatid

cysts. From this spot other cysts can be traced through the deep muscles between the lumbar spine and sacrum to the front of the preparation, where many are embedded in the substance of the psoas muscle above the sacro-iliac joint. The surrounding soft parts are here matted by dense inflammatory tissue.

Case 2 (Bardleben, 'Berlin. klin. Wochen.,' 1883, p. 825).—A washerwoman, aged 23, was delivered in November, 1882, and in the following January (1883) a tumour formed in the left inguinal region. This was explored, and was considered to be due to disease of the ilium. On April 17th, as the tumour had increased much in size, a long incision was made reaching to Poupart's ligament, and a suppurating track was discovered, along which the finger was passed to the brim of the pelvis. Some thick pus escaped, and the wound was irrigated. During the next few days the patient had rigors, and her general condition was bad.

May 3rd.—While changing the dressings a small hydatid cyst was discovered; characteristic hooklets and the laminated cyst-wall were recognised by the microscope. Patient complained of sharp pains in the hepatic region; she was jaundiced, and the urine was deeply tinged with bile.

7th.—The sinus was enlarged and explored with the finger. By this means a swelling of the ilium was detected, the thickness of which was determined bimanually, the opposite hand being placed on the exterior of the hip-bone. Another incision was made at the posterior part of the iliac crest, the muscles were divided, and both surfaces of the ilium were laid bare. This procedure exposed a cavity in the ilium containing hydatids. The osseous cavity was laid open freely, and the interior thoroughly scraped. A large number of hydatids were removed, varying in size from a pea to a pigeon's egg. The wound was drained and kept aseptic; the jaundice disappeared in a few days, and the patient was discharged

on August 1st in good health with the wound quite healed.

Owing to the extent of the disease in the ilium it was thought possible that the hip-joint might have been involved, but there were no symptoms of it.

Case 3 (Thomas, 'Hydatid Disease,' vol. ii, p. 127).—A woman aged 23 came under observation for pain in the region of the right sacro-iliac articulation and a deep-seated elastic swelling beneath the gluteus maximus. Her illness began three years previously. The swelling was incised and clear hydatid fluid evacuated, but septicæmic symptoms soon followed, necessitating free incisions. Great improvement ensued; still a third operation was required, and it was then found that a hydatid cavity occupied the substance of the right iliac bone, and had caused considerable destruction of the osseous tissue. Numerous small hydatids filled the cavity, and had to be cleared out with a gouge and osteotrite. The patient made a satisfactory recovery, and was known to be living six years after the operation.

Case 4 (Stanley, 'Diseases of the Bones,' 1849, p. 190).—A woman aged 54 was admitted into St. Bartholomew's Hospital with a globular and somewhat pendulous tumour, about the size of the closed hand, situated upon the buttock directly over the right sacro-iliac articulation. She stated that it had been five years in progress. A few weeks before her admission it had been punctured, and purulent fluid mixed with hydatids was discharged. The tumour again enlarged to its original size, and when punctured a second time only purulent fluid escaped. A free incision was now made into the tumour with the effect of liberating a large quantity of hydatids together with fragments of bone and purulent fluid. Severe constitutional derangement ensued, which in a few weeks proved fatal.

Autopsy.—On examination numerous globular hydatids

were found in the interior of the right os innominatum, and also within the sacrum. In both these bones the cancellous structure had disappeared, and the surrounding walls were much thinned and widely separated from each other, a large cavity being thus formed in the bone in which the hydatids were lodged. There were also apertures in the walls of each bone through which some of the hydatids had escaped into the surrounding soft parts. The cavity in the sacrum communicated with the spinal canal, and the latter contained numerous hydatids. Each osseous cavity was lined with a smooth white membrane. A mass of hydatids, apparently unconnected with the affected bones, was found among the erector spinæ muscles, and another collection of vesicles occupied a cyst attached to the ovary.

Description of the specimen ('Guy's Hospital Reports,' vol. l, p. 336).—The specimen, as preserved in St. Bartholomew's Hospital Museum, No. 541, consists of the right half of the pelvis with the head of the corresponding femur. Almost the whole of the cancellous tissue of the ilium has disappeared, and the bone is converted into a thin shell, the walls of which are formed by its external and internal tables of compact tissue. These tables are much perforated, particularly on the exterior of the bone, where it has a basket-like appearance; and in places they are widely separated from each other, though for the most part the normal shape of the bone is maintained. Superiorly this excavation in the ilium is limited by the crest, and inferiorly it communicates with the hip-joint by a wide aperture. Within the acetabulum the ligamentum teres, cotyloid ligament, and much of the articular cartilage remain, while the head of the femur shows no evidence of erosion. Posteriorly, where the gluteus maximus arises the ilium is much expanded, and the cavity within the bone communicates by two or three small openings with a large space in the right ala of the sacrum. The sacro-iliac synchondrosis is not perforated, but the passages of communication run above, behind,

and below the joint. The excavation in the sacrum is about the size of a hen's egg; it has a large opening into the pelvis in front, in the site of the anterior sacral foramina, and becomes continuous with the spinal canal just below the last lumbar vertebra. A second much smaller cavity exists towards the apex of the sacrum, which communicates near the posterior inferior iliac spinous process with the cavity in the ilium. The upper posterior sacral foramina are considerably enlarged, whereby the cavity in the sacrum opens into the vertebral groove.

Case 5 (Fricke, 'Hamburg Zeitsch. f. d. ges. med.,' 1838, Bd. vii, p. 383).—A man aged 60 was admitted under the care of Professor Fricke. Nineteen years previously he had had a fall upon the ice, and since that time had experienced pain in the hip and ischial tuberosity. A tumour appeared on the buttock and gradually enlarged. It was fluctuating, but not painful, though deep-seated pains were often felt in the pelvis. The tumour interfered with walking, but did not absolutely prevent it. Death resulted from hectic fever. The diagnosis was chronic abscess.

Autopsy.—There was a large tumour of the right thigh extending from the anterior superior iliac spine downwards to the junction of the upper and middle thirds of the thigh, and backwards into the buttock. By puncture a large quantity of fluid like pea-soup was drawn off, containing numerous hydatid cysts. An incision near the great trochanter showed that the gluteal muscles were riddled with large cavities filled with hydatids. The capsule of the hip-joint was disorganised, and the acetabulum contained yellow fluid and small cysts. A little below the anterior superior iliac spine there was a transparent sac extending into the pelvic cavity. This contained an enormous number of hydatids, and communicated with the acetabulum by two small openings. Pressure on the pelvis caused many cysts to escape from this sac. Another cavity occupied by hydatids upon the ilio-psoas

communicated indirectly with the hip-joint through the ilio-psoas bursa. In the cancellous tissue of the right ilium a space the size of a fist had formed; it involved also much of the ischium and the horizontal ramus of the pubes, and opened into the acetabulum through a large aperture in the vault. The head of the femur was rough and carious. The hydatids varied in size from a pigeon's egg to small pearls. In some places several cysts were found enclosed in one large sac, in others they were free. The primary focus appears to have been in the ilium and ischium, where the destruction of bone was the most extensive.

Case 6 (Rokitansky, 'Path. Anatomy,' vol. iii, p. 134).—A labourer aged 42 had suffered from swellings of the cervical and axillary glands; and five years before his death, from gonorrhœa, chancre, and consequent bubo. Still later his penis had been amputated on account of malignant ulceration. The disease which was afterwards found in his bones began one year before his death with pains of a tearing and boring character.

Autopsy.—The left ilium was found to be converted into a fibrous sac as large as a man's fist. This contained numerous small and large splinters of bone adherent to the inner surface of the sac, as well as hydatid cysts varying from the size of a millet-seed to that of a nut. Similar sacs of less dimensions were found in the pubes, ischium, and sacrum, and projecting from these bones into the pelvic cavity. Some of the hydatids were free, but others, especially the smaller ones, were situated in the dilated cancellous spaces of the eroded fragments of bone. In this situation they were arranged either singly or in clusters. The floor of the acetabulum was completely destroyed, and the head of the femur projected into the large sac which occupied its place.

Case 7 (Denonvilliers, 'Bull. Soc. Anat.,' 1856, p. 119).—A woman aged 47 was admitted under the care of

M. Denonvilliers for a tumour upon the upper and inner part of the thigh. It was soft, painless, and about the size of the fist. The diagnosis was lipoma or chronic abscess. The swelling was incised and pus liberated, but the cause of the abscess was not discovered, though the wound was carefully probed. The patient died three days after the operation.

Autopsy.—There was an abscess behind the pubes and the left thyroid foramen. The horizontal ramus of the pubes was bare, and infiltrated with hydatid cysts. From this site the hydatids extended inwards into the vertical ramus of the pubes and outwards to the acetabulum, which was perforated in two places. The hydatids were not enclosed by a parent cyst, but infiltrated the cancellous tissue of the affected bones. The abscess behind the pubes had burrowed through the thyroid foramen, and presented as a swelling at the top of the thigh. As the pubes was bare only on its posterior surface, nothing was detected by the probe at the time of the operation. The speedy and unexpected death of the patient was not explained by the inspection.

Case 8.—Trendelenburg, 'Verhandl. d. Deutsch. Gesellsch. f. Chirurgie, 1881, Bd. x, S. 60.—A man about 30 years of age was admitted to a hospital with symptoms of hip-joint disease. For several years he had suffered from pain in the right hip; there was a marked limp, fixation of the joint, and a discharging sinus. A swelling was detected upon the inner surface of the ilium, and *per rectum* a hard tumour could be felt upon the ischium, corresponding with the position of the acetabulum. These were regarded as pelvic abscesses, due to perforation of the bone by the disease in the hip. The joint was laid open, when to the surprise of the operator a small hydatid cyst escaped, and it was discovered that the right half of the bony pelvis was extensively invaded with hydatids. The acetabulum was converted into a cavity the size of the fist, bounded by osseous tissue, and occupied

by numerous cysts not larger than a pea. It also contained a sequestrum, the cancellous spaces of which were filled with cysts. The articular cartilage on the head of the femur was much less damaged than the duration of the disease would have suggested. The case was therefore a primary hydatid infiltration of the bony pelvis with subsequent destruction of the hip-joint, giving rise to symptoms of hip disease.

As regards treatment, the hydatids and sequestra were cleared away, and the upper end of the femur freely excised, so as to obtain good drainage. There was a profuse discharge of pus and hydatids, but after a time the wound closed. However, some months later it broke down; amputation was performed through the hip, and the patient sank a few hours after the operation.

Case 9 (Pihan, 'Bull. Société Anat.,' 1860, p. 263).—A soldier aged 27 fell from his horse and was taken to a hospital for a severe bruise on the right hip and buttock. Although there were no signs of injury to the bones and articulation, yet after two months' rest in the hospital he could only get about with the help of a crutch, and there was constant pain in the hip-joint.

When seen two and a half years after the accident, the right thigh was markedly flexed and adducted; the buttock was much swollen, painful on pressure, and yielded deep fluctuation; movement at the hip very limited and acutely painful. Thus the symptoms resembled those of advanced hip disease with considerable shortening of the femur. An incision into the gluteal swelling evacuated an enormous quantity of sweet pus, and the subjacent bone was found to be bare. The abscess cavity was drained, but the patient gradually lost strength, developed hectic fever, and died about nine weeks after the operation.

Autopsy.—The iliac portion of the os innominatum was occupied by a large cavity, produced by separation of the internal and external tables of the ilium to the extent of

6·5 cm. at its widest part, with excavation of its cancellous tissue. This cavity contained pus, masses of hydatid cysts, and sequestra of spongy bone, some of which were an inch long. The walls of the cavity, adherent to the adjacent soft tissues and supported by them, were exceedingly thin, and through perforations in them hydatids had escaped among the muscles of the pelvis and buttock. The acetabulum was so much destroyed that the upper end of the femur had penetrated into the pelvic cavity as far as the small trochanter, the head of the bone being almost worn away. Beside these lesions the sacro-iliac articulation was invaded, the front part of the first two sacral vertebræ was destroyed, and there was a deep excavation in some of the lumbar vertebræ. All of these cavities were filled with hydatids, which extended through the sacral foramina into the erector spinæ muscles on the back of the pelvis. The lumbar and sacral nerves were nowhere compressed, nor was the spinal canal invaded. On careful examination no hydatids were found in other parts of the body.

Case 10 (Viertel, Archiv v. Langenbeck, 1875, p. 487).—Woman aged 25 admitted to hospital. When twelve years old she fell upon the ice, and then felt severe pain in the right hip. However, she was able to rise after a few days and walk with the help of a stick. From that time there has always been more or less pain in the right thigh and hip. Two years before admission a second fall increased the pain and swelling about the hip, and the patient was compelled to take to her bed. Subsequently a painful tumour was observed in the right groin near the pubes, and a little later a fluctuating swelling formed at the anterior superior iliac spine.

On admission (May 2nd)—The patient was in good health generally. The right leg was shortened (2 cm.), and the hip was abducted, rotated out, and flexed, with secondary lordosis and rigidity. Knee-joint normal, but upper part of thigh enlarged. There was a soft rounded tumour

at the inner third of the groin, extending inwards to the labium majus, outwards to the sheath of the vessels, and measuring 12 cm. from above downwards. The tumour was crossed by Poupart's ligament, and appeared to spring from the body and horizontal ramus of the pubes. It was dull on percussion and distinctly fluctuating. A second fluctuating swelling near the anterior iliac spine measured 6 cm. in diameter. By pressure it was completely reducible and the eroded edge of the ilium could be felt. The right iliac fossa was occupied by a large swelling, which evidently communicated with those in the groin. An exploratory puncture gave no result because the cannula became blocked by a fragment of hydatid membrane. A fresh incision after a few days evacuated purulent fluid with scolices.

May 13th.—Pains at back of right thigh and inflammation round the wound.

18th.—Profuse suppuration had occurred. Fragments of bone and hydatid cysts discharged on the dressings.

31st.—Well-marked pyæmic symptoms.

June 7th.—Several carious fetid sequestra removed from the large swelling in the iliac fossa. The tumour at the pubes was incised; a litre of pus and small cysts evacuated. This cavity was situated between the abdominal wall and the thickened peritoneum. It extended to midway between symphysis and umbilicus, and communicated with the larger external swelling in the iliac fossa.

12th.—Patient gradually sank.

Autopsy.—The right half of the pelvis was transformed into a membranous sac, with thin bony plates in its walls which yielded crepitus on pressure. The acetabulum was destroyed, and the altered upper end of the femur had passed into the pelvis as far as the first sacral vertebra. After maceration it was found that the ischium was intact, but the horizontal ramus of the pubes was destroyed; the head of the femur had disappeared, and the remains of the ilium articulated with the top of the great trochanter. The lumbar spine was directed somewhat obliquely upwards and to the left; while the diseased right half of

the pelvis was so displaced that the highest point of its iliac crest was 3 cm. lower than that on the left side, and the symphysis pubis was displaced 2 cm. to the left. Hence the cavity of the true pelvis was contracted. Measurements were :—Diam. spin. = 25 cm.; conj. vera = 10 cm.; tranverse diameter of brim = 9 cm.; between ischial spines it was only 6 cm. The membranous sac above mentioned measured 12 cm. from before backwards, and 9 cm. from side to side; it extended in the direction of the horizontal ramus of the pubes as far as 2 cm. from the symphysis. By maceration the greater part of its wall was removed, especially the upper convex portion. What remained consisted of a semilunar osseous framework replacing the outer surface of the hip-bone; it was smooth externally, but rough and deeply grooved within. Below it the ischial spine and small sacro-sciatic notch were recognisable. Three adventitious articular surfaces had formed on different parts of the framework, and there were corresponding facets on the upper extremity of the femur.

The specimen, which has been preserved in the Breslau Museum, is represented in Pl. VII, fig. 5. It consists of the pelvis, the last four lumbar vertebræ, and the upper ends of the femora. The articular facets on the pelvis are marked *a. b.*; the corresponding surfaces on the right femur are similarly indicated.

Case 11 (Reczey, 'Deutsche Zeitschrift f. Chir.,' 1876, Bd. vii, S. 285).—A woman aged 25 was admitted to a hospital for swellings in the right groin. Her illness began four years previously with sharp pain about the right iliac crest, which was soon followed by a red tender swelling at that spot. Some weeks later a small lump appeared in the right gluteal region, and steadily enlarged. During the last twelve months a third tumour appeared on the outer surface of the right thigh, and likewise enlarged.

On admission (October 11th).—The patient was strong,

and in good health generally. A rounded tumour the size of an infant's head occupied the right buttock, and extended across the sacrum to the middle line. Its surface was smooth, and the tumour projected about 4 cm. above the level of the buttock. In the upper third of the thigh externally and behind the great trochanter a similar swelling existed. It was as large as a cocoa-nut, had an elevation of 5 cm., and was separated from the gluteal swelling by a shallow groove in the direction of the fold of the buttock. Downwards it extended to the lower third of the thigh, and forwards to the groin. Two inches above the anterior superior iliac spine there was a third tumour, the size of the fist, which seemed to dip into the pelvis. These tumours were distinctly fluctuant, and apparently communicated with each other, but the skin covering them was normal, and there was no increase of temperature in the affected parts. A bony swelling connected with the inner surface of the ilium was also detected, and the adjacent region of the abdominal cavity was dull on percussion. There was no pain, and very little interference with walking.

The patient at times suffered from pain in the region of the bladder with difficulty in micturition, but the urine was normal, and there was nothing wrong with the pelvic viscera except a little utero-vaginal catarrh. Clinically the case was regarded as one of extensive suppuration due to chronic periostitis of the ilium.

November 8th.—The gluteal swelling was punctured and drained, and a pint and a half of thick purulent fluid slowly escaped. Four days later hydatid cysts, the size of peas, were recognised in the discharge, and it was found that pressure on the iliac crest increased the flow. As the nature of the case was then clear, the swelling was freely incised, and many cysts were evacuated.

From this time till her death the patient showed signs of chronic pyæmia, with occasional rigors, pains in joints, diarrhœa and wasting. Other swellings were incised, there was free suppuration, and an extensive bedsore

formed on the sacrum. One month before death a spontaneous fracture of the neck of the femur was discovered. Death occurred four and a half months after admission.

Autopsy.—The right leg was shortened to the extent of five inches, and markedly rotated outwards. Between the skin and fascia lata upon the front of the thigh there was a cavity containing brownish fluid, which communicated with a large intra-pelvic abscess along the ilio-psoas muscle. The two lamellæ of the ilium were widely separated, and the space occupied by hydatid cysts the size of walnuts. So many perforations existed in the bone that it was represented by little more than a coarse framework. The acetabulum being destroyed, the head of the femur had penetrated deeply between the lamellæ of the ilium, and rested near the right first and second anterior sacral foramina. An excavation in the right half of the sacrum contained hydatids mixed with pus and bony fragments. The head, neck, and upper third of shaft of femur were infiltrated with cysts, and were therefore spongy and brittle. A spontaneous fracture had taken place through the root of the neck, and the lower fragment of the femur was strongly drawn up on the outer side of the upper fragment. A hydatid cyst as large as an apple was found in the upper lobe of the right lung.

Case 12 (Schwartz, 'Archives Générales,' 1884, i, p. 609).—A tradesman aged 42, who had been ill for four years, came under observation with a fluctuating swelling in the hollow of the groin. He had previously suffered from hip disease, ending in ankylosis. By puncture of the swelling some grumous pus was drawn off, and a free incision evacuated a large quantity of pus mixed with numerous small fragments of necrosed bone, which were derived from the ilium. The abscess cavity was found to extend downwards and inwards upon the inner surface of the ischium and pubes. The curette brought away very little. On the twentieth day after the operation five or six collapsed hydatid cysts escaped from the

wound. The patient died of septicæmia on the thirty-eighth day.

Autopsy.—It was found that a large part of the os innominatum, together with the upper end of the femur, were almost completely destroyed. Suppuration had extended from the cavity which contained the hydatids into the groin, and had burst externally. The clinical diagnosis was abscess due to bone disease, and the existence of hydatids was not suspected. When the discharge of cysts occurred the diagnosis was clear.

b. Primary Hydatid Disease of Sacrum.

Case 13 (Mazet, 'Bull. Soc. Anat.,' 1837, p. 226).—A man was admitted to a hospital for a chronic abscess situated over the posterior and superior spine of the ilium. An incision into the swelling liberated some excessively foul pus. Death ensued. There were no paralytic symptoms during life.

Autopsy.—It was found that the lower end of the vertebral canal and the whole length of the sacral canal were filled with hydatid cysts. The sacrum itself was carious, and its canal communicated with the abscess cavity by an opening situated in the posterior part of the bone near the middle line. The specimen is preserved in the Dupuytren Museum.

Case 14 (Duplay et Morat, 'Archives de Médécine,' 1873, vol. iv, p. 558).—A woman aged 63 was admitted to a hospital for a swelling upon the back of the sacrum which began seven years previously. It was situated at the upper end of the groove between the buttocks, somewhat to the right of the middle line; the swelling was soft, fluctuating, and about the size of the two fists. Fluctuation could also be detected in it by examination *per rectum*. At first the swelling had formed slowly, but two and a half years before admission it began to enlarge

more rapidly, causing severe sciatica. Gradually the patient became paraplegic, sensory and trophic lesions were developed, and the lower extremities wasted and became drawn up. An exploratory incision into the swelling evacuated two litres of pus containing a large number of hydatid cysts. The surface of the sacrum was found to be bare, and some irregular sequestra were removed by a second incision made obliquely a little below the tuber ischii. With the finger the outline of the abscess cavity could be traced towards the wall of the rectum, as well as into the canal of the sacrum. After the operation rigors rapidly supervened, and the patient died on the fourth day.

Autopsy.—Two collections of hydatids were found, the one outside and the other within the spinal canal, and there was a communication between them. The osseous walls of the space were thinned, and the sacral nerves compressed.

Case 15 (Gangolphe et Polaillon, 'Kystes Hydatiques des Os,' 1886, p. 89).—A female glover, aged 33, was admitted to a hospital for a swelling in the sacral region. Her illness began four years previously with attacks of severe pain in the right leg and loin. About twelve months before admission a swelling formed over the back of the sacrum, and slowly enlarged until four days before admission, when the patient fell downstairs and bruised herself severely in the sacral region. After the accident the swelling rapidly enlarged.

On admission there was a soft fluctuating tumour over the upper sacral vertebræ, and encroaching upon the lumbar region. The skin over it was red and inflamed. The groove between the buttocks divided the lower part of the swelling into two lobes. Temperature normal; defæcation often painful; occasional difficulty in micturition; menses had always been irregular. By aspiration the nature of the swelling was determined. Accordingly two incisions were made, and a large quantity of thick pus,

hydatid cysts, and fragments of bone were evacuated. With the finger a large excavation in the sacrum was discovered. The wound was irrigated and drained. For seven weeks after the operation there was an abundant discharge of pus. The patient often had difficulty in micturition, and sometimes pain in the hypogastrium and thigh ; bowels generally confined. On vaginal examination the front of the sacrum was readily felt, and seemed to bulge forwards. The suppurating wounds were enlarged, and it was found that the finger could be passed through an irregular aperture in the middle of the sacrum as far as the soft parts of the pelvic cavity. Fragments of bone were readily detached from the margins of this perforation, and many large sequestra were removed at subsequent dressings of the wound. The cavity in the bone appeared to run forwards and to the left, towards the summit of the sacrum. The wound gradually closed about seven months after admission. Microscopical examination of the sequestra showed infiltration of the cancellous spaces with minute hydatid cysts, and some degree of rarefaction, but no inflammatory changes in the osseous tissue.

c. Hydatids of Spine invading Pelvis.

Case 16 (Wood, 'Australian Med. Journ.,' 1879, p. 222).—A woman aged 45 was admitted to a hospital for rheumatic pains in legs and back, followed by incontinence of urine, paraplegia, and loss of sensation. Death from coma.

Autopsy.—There was a hydatid cyst within the dura mater of the spinal cord opposite the last lumbar and upper three sacral vertebræ. It filled the spinal canal, and was prolonged through the second left anterior sacral foramen so as to form a bilocular swelling on the front of the sacrum, covering the exits of the second and third sacral nerves. There was another prolongation into the first foramen on the same side, with the result that the

first and second left anterior sacral foramina were partially thrown into one large aperture. The entire cyst with its prolongations was filled with small daughter-cysts, and it had been apparently ruptured within the spinal canal, for there was a large quantity of fluid and some free cysts within the membranes of the cord and brain. Embedded in the right lobe of the liver was a hydatid cyst four inches in diameter, filled with secondary vesicles ; other viscera were normal. The cysts showed the characteristic lamination of the membranes, but no scolices or hooklets.

Case 17 ('Guy's Hospital Reports,' vol. l, p. 343).—A boy aged 17 died of severe cystitis and suppurative pyelonephritis. The body was much emaciated, and there was an extensive slough over the back of the sacrum.

Autopsy.—In the pelvic cavity there was a thick-walled cyst the size of a small apple, which was adherent to the upper part of the sacrum, and had pushed the rectum aside and pressed upon the base of the bladder. This cyst contained from forty to fifty hydatids, varying in size from a pin's head to a small walnut, and its cavity communicated with the spinal canal through the first right anterior sacral foramen, which was enlarged to three times its normal dimensions. Within the canal the cysts had compressed the spinal membranes and cauda equina. With the exception of a small hydatid in the liver, the remaining viscera were normal. Further dissection revealed distinct erosion of both anterior and posterior surfaces of the bodies of the first two sacral vertebræ, and superficial infiltration of the cancellous tissue with minute hydatids. The sac on the front of the sacrum was partly bounded by the eroded bone, and partly by a thick fibrous membrane ; it was crossed by branches of the right internal iliac vessels, and covered with peritoneum.

Case 18 (Hontang, 'Bull. Soc. Anat.,' 1885, p. 95).—

A woman aged 53 died of myelitis after an illness of five months' duration.

Autopsy.—On the right side of the lumbar spine there was a large tumour extending from the last rib to the superior aperture of the pelvic cavity, and filling the right loin as well as the corresponding iliac fossa. It proved to be a hydatid cyst filled with fluid and many daughter-cysts, and was connected with a focus of hydatid disease in the substance of the lumbar vertebræ.

d. Hydatids of Femur invading Pelvis.

Case 19 (Schnitzler, 'Internat. klin. Rundschau.,' 1892, S. 1138).—A man aged 28 was admitted to a hospital for large swellings in the groin, thigh, and buttock. His illness began when ten years old with a swelling in the left groin, which was thought to be due to hip disease. Fluctuating tumours subsequently formed in other parts of the thigh, and very slowly enlarged. One of these ultimately burst, and gave vent to a large quantity of brownish fluid. During the whole of his illness the patient could walk with the help of a stick, and suffered very little pain. The swellings were freely incised and drained, but the patient gradually sank from exhaustion.

Autopsy.—Very extensive destruction of the upper two thirds of the femur was found, and the disease had extended to the ilium and horizontal ramus of the pubes around the acetabulum. Large suppurating cavities existed in the left iliac fossa beneath the peritoneum, and extended towards the pubes. These contained fœtid pus and cysts. In the hollow of the sacrum alongside of the rectum there was a thin-walled sac containing many hydatids about the size of a pea.

Case 20 ('Guy's Hospital Reports,' vol. l, p. 334).—A greengrocer aged 38 was admitted for large swellings in

the thigh and groin. Incisions evacuated much brown pus mingled with hydatid cysts. A sequestrum representing a part of the head of the femur was removed, and a perforation was then discovered in the acetabulum. The wall of the pelvis felt very friable. Ankylosis of the hip eventually took place with shortening of the limb to the extent of nearly three inches.

A CASE OF PRIMARY CARCINOMA OF THE BODY OF THE UTERUS IN WHICH VAGINAL HYSTERECTOMY WAS PERFORMED, AND MORE THAN TWO YEARS HAVE ELAPSED WITHOUT RECURRENCE; WITH A TABLE OF FIVE OTHER CASES OF VAGINAL HYSTERECTOMY FOR CANCER OF THE BODY OF THE UTERUS.

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(*Abstract.*)

The author records a case of primary carcinoma of the body of the uterus in a patient 44 years of age. Vaginal hysterectomy was performed on the 17th of March, 1892. The patient made a good recovery from the operation, and has remained under the author's observation, so that he has examined her from time to time. She has remained in good health, and there was no sign of recurrence when she was last examined on November 1st, 1894. Attention is directed to the possibility of early cases of cancer of the body being mistaken for uterine fibroid. The shorter duration of the symptoms in cancer of the body will generally, at least, justify further investigation by dilatation of the cervix. As regards the operation itself, attention is called to the difficulty of getting the uterus out, even when it is partially or completely separated, where it is as large as that in the present case.

In Case 6 in the table this difficulty was overcome by applying a pair of forceps similar to small midwifery forceps.

The author prefers pressure forceps to ligatures for securing the broad ligaments. Ligatures, however, were used in the first two cases in the table, and pressure-forceps in the remaining cases.

For a case such as that here fully recorded to have any scientific value as bearing on the amenability of cancer of the body of the uterus to operative treatment, two conditions are essential: first, the exhibition of the specimen and of sections of it, so that independent observation may corroborate the author's opinion as to the nature of the growth; and secondly, that the patient should come regularly to be examined, as she fortunately has done in this case.

The author gives reasons for thinking that primary cancer of the body of the uterus may be a more chronic disease than cancer of the cervix. As regards clinical varieties, he has met with two. In one set of cases the growth is soft, friable, and easily broken down with the finger. In the other set of cases there is merely a hard, irregular, perhaps ulcerated condition found in the endometrium; in these cases nothing can be detached with the finger or curette.

A table of the six cases in which the author has performed vaginal hysterectomy for primary cancer of the body of the uterus is appended. There was no mortality from the operation. The subsequent history is briefly indicated in the table.

J. T—, aged 44, was admitted into the London Hospital under my care on February 24th, 1892.

Previous history.—Till about a year ago she always lived comfortably, and had plenty to eat and drink. As regards stimulants, she has only taken a glass of beer occasionally. She was in service before she married. She has been married twice; the first time when she was thirty-four, and the second time when she was forty-three. She has never had any children or miscarriages.

The *catamenia* appeared when she was twenty, and she has been regular every three weeks; the periods lasted a week, and she lost a full quantity each time. She had no pain or discomfort at her periods till six or seven years ago.

Family history.—Her father died of "old age;" she does not know the cause of her mother's death. She had one brother who, when last she heard of him, was not in his right mind.

History of the present illness.—She was quite well till about seven years ago. About that time she began to have pain in the right groin, going round to the back at the menstrual periods. She had then no pain whatever between the periods, and apparently, till at all events the last few months, her general health seems to have been fairly good. She herself only dates her illness from Christmas, 1891, that is about two months only before her admission to the hospital. Up till Christmas last she had continued to menstruate regularly every three weeks, and had no pain between the periods, nor was there any intermenstrual discharge till then. Since Christmas, 1891, she has not had any severe pain, but there has been an almost constant red vaginal discharge between the periods. Since then a week is the longest time she has gone without seeing some red discharge. She has lost flesh considerably, but the appetite has been good, and she has been able to sleep well. During the last three weeks she has found a difficulty in holding her water when lying quiet in bed. There has been no offensive vaginal discharge.

State on admission.—The patient was very markedly anæmic, her expression somewhat anxious, and her general condition feeble. There was no evidence of any organic disease in the chest, but there was a loud systolic murmur, best heard at the base, and seemed sufficiently accounted for by the extreme anæmia. The heart's apex-beat was in the normal position. The pulse was 84. The urine was normal.

March 1st.—The following note was made:—"No distinct swelling can be felt in the hypogastric region on simple abdominal examination. On bimanual examination the uterus is considerably enlarged, and in a position of anteversion. The external os is rather patulous, and

there is a small mucous polypus attached just within it. The sound passed 3½ inches. The discharge from the os uteri is sanious but not offensive."

At this time my opinion was that the case was probably one of uterine fibroid. On further consideration, however, and taking into account that although she had suffered from dysmenorrhœa for six or seven years her illness had begun somewhat acutely, and had only lasted some two or three months, and having in mind that she was at the time of admission much more anæmic than is commonly the case in patients with uterine fibroids of only a few months' duration, it seemed to me that the case called for further investigation, and accordingly I decided to dilate the cervix and explore the endometrium.

On March the 9th I inserted three laminaria tents, and on the next day examined the patient under ether. After removing the tents the finger passed easily into the uterus, and found an extensive, soft, brittle growth on the posterior surface of the endometrium, chiefly to the right of the middle line. Yellowish-white pieces of the growth came away as the finger was withdrawn. The uterus was freely moveable, and there was no evidence of extension either to the broad ligaments, or the utero-sacral ligaments. The discharge on the examining finger that had been passed into the uterus was not in the least offensive.

The result of the examination satisfied me that the case was one of primary malignant disease of the body of the uterus; and the subsequent microscopic examination of the specimen fully confirmed this view, the growth being a typical carcinoma. The patient readily consented to operation, and accordingly I proceeded to remove the uterus on March 17th, 1892, at 2 p.m.

Note on the operation.—In the morning, and again at midday, a vaginal douche of 1—1000 corrosive sublimate solution was given. The patient was anæsthetised with the A. C. E. mixture. A vaginal douche of 1—1000 sublimate lotion was given, and the cervix drawn down to

the orifice of the vulva with two volsellæ. The anterior fornix was incised first, then the posterior, and then the ends of these incisions were joined laterally. The bladder was easily separated as high as the vesico-uterine pouch. Douglas's pouch was then opened. The lateral attachments of the cervix were clamped, and the cervix thus cleared as high as the level of the internal os uteri. The vesico-uterine pouch of peritoneum was then opened. So far no difficulty had been met with. Examining now with one finger in Douglas's pouch and one anteriorly, it became evident that there would be great difficulty in getting the uterus out on account of its size. At one time I thought of overcoming this difficulty by splitting the uterus into two halves, as has been done by various operators. When I had done so as far as the upper limit of the cervix there seemed to me to be great risk in continuing to divide the uterus for fear of injuring adjacent structures, and I gave up the attempt. At last, by exercising very strong traction on the uterus towards the left, I was able to get my finger above the right broad ligament. This I clamped outside the ovary, and divided it. By steady pulling the right side of the uterus was gradually brought into view, and then the fundus. The uterus was now only attached by the left broad ligament; this was easily clamped between the uterus and the ovary. The broad ligament was then divided and the uterus removed. A cyst the size of half a walnut was met with in the left broad ligament; it was punctured, and a little clear fluid came out of it. A douche of iodine water (3j Tr. Iodi to the pint of water) was then given, some of it passing well into Douglas's pouch. There were four pairs of large pressure forceps left on, and two pairs of small forceps. Dry carbolic gauze was packed into the vagina, a T-bandage was put on, and the patient put into bed. It should have been mentioned that, owing to the narrowness of the vagina, it was found necessary to get additional room by incising the posterior vaginal wall and perinæum. The operation lasted one hour and ten minutes.

Subsequent progress.—The patient made an uninterrupted recovery. She was several times sick during the first forty-eight hours after the operation; the last occasion on which she vomited being at 12 noon on the 19th of March, the second day. The gauze plug was taken out on the morning of the 18th, and the pressure forceps were removed at 5 p.m. on the 19th. After the removal of the forceps douches of weak iodine water were given every six hours for several days.

As regards the pulse and temperature, the temperature on the evening of the day after the operation, the 18th of March, was 99·4°; on the 19th the pulse was 100, and the temperature 99·8°. The temperature was about 100°, and not above 100·2°, for seven days after the operation. On the evening of the seventh day it was 101°, and on that of the ninth day 102·2°, which was the highest temperature recorded. On the tenth day the temperature was 100°, and on the eleventh 98° in the morning. After that day there was no rise above 100°. It will be noticed that the highest temperature occurred about the time when the sloughs in the neighbourhood of the wound might be expected to be separating.

On April 7th she had some pain in the region of the anus and vagina, but the temperature was only 100°, and the pulse 80. She was examined on this date, and the following note made:

"At the upper part of the vagina there is a cavity the size of a halfpenny, and about half to three quarters of an inch deep. It has the appearance of a healthy granulating wound. The abdomen is flaccid, and not tender."

On April 14th she was examined again, and the raw surface at the top of the vagina was then only the size of sixpence.

On May 5th the wound was found to be healed, except a little granulation the size of a pea.

On May 19th the wound was soundly healed.

Note on the weight.—On March 2nd, *i. e.* before the

operation, the patient weighed 7 st. and ½ lb.; on April 21st, 6 st. 12 lbs.; and on May 11th, 7 st. 7 lbs.

The patient has come to see me at the London Hospital at intervals of a few weeks ever since the operation up to the present time, and from time to time she has been weighed, and I have examined her. There has been no sign of recurrence. The last time I examined her was in September, 1894, two years and a half since the operation.

Note on the specimen.—It was measured and weighed after being two years in spirit. The extreme length is 4½ inches, and the thickness from before back 2⅛ inches. The breadth from side to side could not be well measured after the uterus had been opened and hardened. The weight of the uterus is 6 oz. Microscopically the growth is a columnar-celled carcinoma.

Remarks.—In all cases where long periods have elapsed after operations for malignant growths without recurrence it is essential, in order that any such case may have scientific value, first, that the growth should be proved beyond doubt to be malignant,—as, for example, by submitting it to the examination of independent observers; and second, that opportunity should be afforded of keeping the patient under observation. The specimen (and a section of it) from the case just recorded were exhibited at the Obstetrical Society of London some two years ago,* and have also been seen by many other observers privately, among whom I may mention Sir John Williams, and every one who has examined it has agreed that it is a carcinoma of the body of the uterus. As regards the other condition, it has fortunately happened that the patient has come to see me regularly at the London Hospital, and up to the present time has remained quite well.

Looking over the history of the case, it will be observed that as regards age she was rather younger than most of the cases of primary carcinoma of the body of the uterus, as most patients with this disease are over fifty years of

* 'Obstet. Trans.,' vol. xxxiv, p. 213.

age, while the patient was only forty-four. *As regards symptoms,* pain was not a marked feature, but it is worth noticing that for seven years before the commencement of this illness she had dysmenorrhœa, and that up till then she had suffered from no pain at her periods. *As regards fertility,* this patient was sterile ; and the fact that she had been twice married makes it almost certain that the sterility was on her side.

As regards diagnosis, it will be evident on looking at the history that there are many points in common between carcinoma of the body of the uterus and fibroid tumour of the uterus. Thus sterility, a dysmenorrhœa commencing in adult life, metrorrhagia, marked anæmia, a normal condition of the vaginal portion of the cervix and a considerable enlargement of the body of the uterus are all features equally presented in many cases of uterine fibroid. As a rule, the fact that carcinoma of the body of the uterus occurs after the menopause would readily serve to exclude fibroid tumour of the uterus ; but when the disease occurs under fifty, as in this case, the age will not help the diagnosis. At first, for a few days, I was myself inclined to regard the case as one of fibroid tumour ; but when a careful inquiry was made as to the duration of the symptoms, it appeared to me that the patient was, speaking generally, in a much worse condition than would be accounted for by the presence of fibroid tumour of the uterus for only three months or thereabouts ; and fortunately I determined on dilating the cervix, when the discovery of a soft, friable, papillary growth made the nature of the case at once evident.

As regards the operation, the mechanical difficulty of getting the uterus out was very considerable. I do not use ligatures in extirpating the uterus *per vaginam ;* and I do not myself see how, working in a narrow space with so large a uterus as that in this case, one could feel confident that the vessels were securely tied. With a small uterus the broad ligaments can be securely tied, and no doubt they can be sometimes also when the

uterus is as large as in this case. I used ligatures myself in a case where the uterus was of about the same size, a case I have recorded previously in the Obstetrical 'Transactions,'* but I think the risk of ligatures coming off or getting loose in such cases is very considerable, and I prefer to trust entirely to pressure forceps. It is said that there is a greater risk of secondary hæmorrhage when pressure forceps have been used, but I have never had this occur, though I am quite alive to the fact that pressure forceps have their disadvantages.

The case just recorded was the third in which I have removed the whole uterus *per vaginam* for carcinoma of the body. Altogether I have had six cases of extirpation for carcinoma of the body. In all the six the patients recovered from the operation. Case 1 was fully recorded in the Obstetrical Society's 'Transactions.'† Case 2 was recorded in the 'Lancet,'‡ and is the only one of the six in which I cannot produce absolute proof that the case was one of carcinoma. I may briefly say that in that case a polypoid cauliflower-like mass, exactly to all appearance resembling the ordinary cauliflower growth of the cervix, projected through a dilated os uteri. I removed the mass, which came away in pieces as does the ordinary cauliflower growth, unfortunately keeping none of the mass, as I relied on finding plenty of it when I should subsequently extirpate the uterus. When I extirpated the uterus, however, I could not find any of the growth, though there was a depressed excavated area presumably the situation where the polypoid mass had been attached. Case 3 is the one fully recorded in this paper. In Cases 4, 5, and 6 the proof of malignancy is complete, and I have the specimens and sections; but two years have not yet elapsed since the operation in these cases, and I reserve the full record of them for another occasion. A short table of these six cases is appended.

* Case 1 in the table.

† Vol. xxx, for 1888, p. 218.

‡ 'Lancet,' 1893, vol. i, p. 1379.

Table of Six Cases of Vaginal Hysterectomy for Primary Carcinoma of the Body of the Uterus.

No.	Initial.	Age.	Date of operation.	Place of operation	Result.	Variety of growth.	Subsequent history.
1	Mrs. R.	58	March 1st, 1885	London Hospital	Recovered	Soft	Well for nearly a year, then recurrence. See 'Obst. Trans.,' vol. xxx, p. 218.
2	Mrs. W.	42	Nov. 7th, 1889	London Hospital	Recovered	Soft	Known to be quite well Oct., 1893; not seen since. Full record of case, 'Lancet,' 1893, vol. i, p. 1379.
3*	Mrs. T.	44	March 17th, 1892	London Hospital	Recovered	Soft	Quite well Nov. 1st, 1894. This is the case fully recorded in the present paper.
4	Mrs. D.	53	Feb. 1st, 1893	Private; with Dr. Stott, of Highgate	Recovered	Hard	I had a letter from Dr. Stott just before the paper was read, to say this patient is quite well.
5	Mrs. S.	57	June 8th, 1893	London Hospital	Recovered	Hard	Quite well June 22nd, 1894.
6	Mrs. T.	54	Aug. 21st, 1893	London Hospital	Recovered	Soft	Quite well Oct. 11th, 1894.

* The case fully recorded in the present paper.

Dr. Lewers showed the specimens corresponding to cases numbered 3, 4, 5, and 6 in the table; and sections of each of these specimens were also exhibited under the microscope.

Clinical varieties.—A word or two may be said as to the clinical varieties of cancer of the body of the uterus. As far as my own experience goes there are two kinds of growth. In one set of cases the growth is papillary, soft, and easily broken down, so that pieces are readily detached with the finger. In the other set of cases the growth is hard, and nothing can be detached, either with the finger or curette. In both sets of cases the history and symptoms are similar; there is enlargement of the body of the uterus, and free bleeding follows the passage of the sound, no matter how gently it may be used. This is a very suggestive sign, and should, I think, always lead to a further investigation. In the cases where the growth is hard, one cannot feel the same certainty as regards the diagnosis as when the growth is of the soft variety. The examining finger finds a hard, irregular, perhaps ulcerated condition of the endometrium that cannot be classified with any non-malignant condition with which we are familiar. The microscopical appearances are equally typical of carcinoma in the hard as in the soft variety. In four of the six cases tabulated the growth was of the soft variety, in the remaining two it was hard.

In addition to the cases mentioned in the table I have, speaking from memory, seen altogether five other cases, in my own practice, of cancer of the body of the uterus in which, either because the disease was too far advanced, or because the patient refused to have anything done, I did not operate. In four of the five I think the growth was soft, in the other hard. The history of some of those cases that were not operated on, as well as the history in some of the six cases which I have here tabulated, gives me an impression that cancer of the body of the uterus

may be a more chronic disease than cancer of the cervix. Quite recently I heard of a case (one of the five mentioned in which no operation was performed) that was sent to see me in September, 1891, by Dr. Skyrme, of Cardiff. The patient is only now, September, 1894, actually *in extremis*. The symptoms had lasted nearly a year when I first saw her. It will be seen that of the eleven cases of cancer of the body of the uterus here referred to, in six of them the uterus was removed, and in two of the remaining five the patients refused to allow an operation. That is, in eight out of eleven cases an operation seemed desirable when the cases first came under my observation. If one compares this result with similar cases of cancer of the cervix, I cannot speak from actual figures, not having kept a record of cases too far advanced for operation, but I have only performed thirty-eight radical operations for cancer of the cervix; of these twenty-five were supravaginal amputations of the cervix, and the remaining thirteen were total extirpations; but altogether I must have seen several hundred cases of cancer of the cervix too far advanced for any operation to be advisable. This, then, to some extent bears out the impression I have mentioned, namely, that cases of carcinoma of the body of the uterus tend to run a more chronic course than those of cancer of the cervix; but it is difficult to obtain the data necessary for a definite conclusion on this point.

Dr. Peter Horrocks hoped for the time when cancer might be cured by less repulsive means than the knife. It must be admitted that the knife was the best treatment at our disposal to-day, and hence progress had been made since the days of Sir Benjamin Brodie, who used this method of treatment very largely for cancer, more especially of the breast. At the end of his life he said he was doubtful whether the operations had prolonged life or not. Nevertheless all must admit that excision, when performed early enough, was the best thing to be done, and so it was very important to know how best to do it. He noted that the author of the paper stated that when a uterine sound was passed it invariably caused profuse hæmorrhage when cancer was present in the body. He related

particulars of a case of his colleague's in which the passage of a uterine sound caused no hæmorrhage worth mentioning, and yet it was subsequently discovered that there was extensive malignant growth in the walls of the cavity of the uterus. No doubt this was an exceptional case, but it ought not to go forth that unless profuse hæmorrhage results on the passing of a sound, therefore malignant disease is not present. Again, in regard to the pain, he was disposed to agree with the author that the severity of the pain was not so great on the average in cases of cancer of the body as in cases of cancer of the neck of the womb. He had hitherto preferred to use ligatures to tie the broad ligaments rather than forceps; but inasmuch as the latter so materially lessened the time of the operation, and, moreover, as they had been so successful in the hands of the author, he felt disposed to try them again. He pointed out how the handles got in the way, and how difficult it was to avoid moving them with the risk of tearing the tissues held by the blades, or dragging the latter off the parts held. Also he asked if the author used any particular form of forceps, as it was difficult to get a pair that would grasp equally from heel to tip of the blades. In some cases where the uterus was very large it was necessary to open the abdomen, fix a serre-nœud low down, and remove the part above; then close the abdomen and remove the piece of cervix and serre-nœud *per vaginam*. He mentioned two cases in which this had been done—one by his colleague, the patient recovering, and the other by himself, in which the growth was so large that it was impossible to remove even the remaining portion *per vaginam*, and the whole of it had to be removed by the abdomen: this patient succumbed.

Dr. Amand Routh complimented Dr. Lewers on his paper and on his success. He had, when he first began to do vaginal hysterectomy, used forceps for securing the broad ligaments, because they shortened the duration of the operation, thus lessening shock, and because one could tell with more exactness the point up to which the ligament could be divided, which one could not always do with silk sutures. He had soon found, however, that the convalescing stage, when forceps had been used, was not nearly so satisfactory as after ligaturing. The forceps go some way up into the peritoneal cavity, and are in a few hours surrounded by lymph, and when the forceps were removed at the end of thirty-six or forty-eight hours, spaces were left containing a piece of broad ligament which sloughs and comes away by suppuration in about ten or eleven days, during which time there is some exhaustion and pyrexia, ranging often to 102° F., and occasional pocketing of pus. The forceps, moreover, take up much room, especially in cases where the uterus is large, as they have to be put on obliquely.

Latterly, therefore, he had used ligatures only, and the temperature rarely rose to 100° F., and the patient was practically convalescent about the third day. He would like to know what was Dr. Lewers's practice as regards removing the ovaries in these cases. In women of fifty and sixty it did not much matter whether they were removed or not, but it was thought by some that in younger women it was advantageous to do so.

Mr. Malcolm said he had been asked by Mr. Knowsley Thornton to mention two cases operated on by him—one in July, 1885, and one in July, 1889. Both were now quite well, more than nine and five years after the operations. The first was between forty-five and fifty years of age, and the age of the second was twenty-eight. Both were diagnosed by scraping, and microscopic examination of the parts removed, and in both cases the cancerous nature of the disease was verified by microscopic examination after removal. Both cases were treated in association with the late Dr. Matthews Duncan. The first of these cases showed a hard tumour, about the size of a hazel-nut, situated in the centre of the fundus of the uterus close to its mucous membrane, which was here destroyed. The growth resembled a scirrhus of the breast, with trabeculæ extending in all directions, but in no case passing beyond the uterine substance. The operation was rendered difficult by the presence of a subperitoneal fibroid, about one inch in diameter, on the inner part of the left broad ligament. Ligatures were used to arrest the hæmorrhage, and no forceps were left in the vagina, which was packed with iodoform gauze, and there was no trouble during convalescence. Mr. Malcolm regretted that he could not remember any details of the second case.

Mr. Alban Doran concluded, after a study of Dr. Lewers's and Professor Kaltenbach's statistics, that vaginal hysterectomy for cancer was justifiable, and that cancer of the uterus was less malignant than cancer of the breast. Many surgeons, arguing *a priori*, insisted that vaginal hysterectomy was bad surgery, as it was impossible to cut freely beyond the limits of the cancer. In operating for cancer of the breast many authorities adopted very radical measures, excising the pectoralis major muscle and all the fat around the breast as high as the clavicle and far up the axilla reaching to the vein. Yet the cancer, nevertheless, recurred in many patients. On the other hand, recurrence was hardly, if at all, more frequent after vaginal hysterectomy, where the knife was, of necessity, made to pass very close to the limits of the malignant deposit.

Dr. Griffith, while complimenting Dr. Lewers on the success of his cases and the value of his contributions to the subject, desired to appeal to him to classify his cases according to the existing standard of pathological classification. Why should gynæcologists alone be content to use the terms hard

and soft for cancer of the body of the uterus, and cauliflower and mushroom, &c., for cancers of the cervix—terms which have a certain clinical value indeed, but convey no accurate idea of the varieties of the disease? Dr. Griffith also referred to the great difficulty that there often is in the diagnosis of cancer of the body in its early stages, more particularly perhaps in distinguishing malignant from simple adenoma of the mucous membrane.

The PRESIDENT thought that Dr. Lewers was to be congratulated on the reception his paper had met with and the discussion it had elicited. He (the President) thought that in the treatment of cancer we had advanced very far beyond the position during the life of Sir Benjamin Brodie, for it was beyond doubt that the removal of cancer of the uterus did often prolong life. There was a good reason why better results should follow removal of uterine cancer than removal of cancer in other parts; for uterine cancer was less often accompanied with secondary growths in other parts than any other kind of cancer. The decrease in the mortality of this operation was very gratifying. When the Society last discussed this question in 1885, the mortality was shown to be about 28 per cent. In a recent paper by Buecheler ('Zeit. f. Geb. und Gyn.,' Band xxx) was a table embracing nearly 800 cases by different German operators, and showing an average mortality of about 10 per cent., while of 159 cases operated on by the late Prof. Kaltenbach the mortality was only between 3 and 4 per cent. He (the President) saw no reason why the mortality should not be still further reduced; for in well-selected cases, in which the disease was early, the operator had to deal with parts unaltered by disease, and the best way of proceeding could be reduced to rule; there were in this operation none of the manifold difficulties attending the removal of large tumours and inflamed parts. In Prof. Kaltenbach's cases the proportion of those going three years and upwards without recurrence was 25 per cent., and other statistics showed as large a proportion. The question of ligature *versus* forceps was a very important one. By using ligatures the removal of the uterine appendages was possible. This had two advantages. First, in cancer there was sometimes pyosalpinx, and cancer of the uterine body sometimes spread along the Fallopian tubes. In such cases there was an undeniable advantage in removing the tubes. But in cases suitable for operation such disease of the tubes was not common. Second, it was said that when the uterine appendages were left pelvic pain and troublesome moliminal symptoms occurred. He (the President) did not remember that in the cases in which he had removed the uterus and left the appendages there had been much complaint of the kind, but he thought the experience of operators was wanted as to the frequency and severity of such

symptoms. Prof. Kaltenbach made a point of suturing the peritoneum. By this any prolapse of bowel or omentum was prevented. He (the President) had had one case in which a piece of omentum came down after the operation, became adherent in the wound, and sloughed off. The patient did well, but it was an accident which it was desirable to prevent. He (the President) could confirm, from his own experience, Dr. Lewers's statement that there were cases of cancer of the body of uterus in which nothing could be detached with finger or curette; in these cases the diagnosis had to be made without the help of the microscope. Dr. Lewers's classification of cases of cancer of the uterine body into hard and soft, although perhaps clinically useful, yet did not exhaust all the varieties of this disease.

Dr. Lewers, in reply, said that the case cited by Dr. Horrocks in which no hæmorrhage followed the passing of the sound was very interesting; but still it was true that in the large majority of cases of cancer of the body of the uterus rather free bleeding occurred, no matter how gently the sound was passed; also in the majority of the cases pain was an early and marked symptom; exceptionally, as in the case fully recorded in his paper, pain was not conspicuous. While every one would welcome any means of treating cancer effectually without operation, it could not be contested that at present the only hope for the patient lay in early diagnosis and free removal of the diseased tissue. He thought there could be no question that when cases for operation were carefully selected life was prolonged by the operation. In the case in question the patient was at the present time in perfect health, though it was nearly three years since the uterus had been removed. As regards the diagnosis of cancer of the body of the uterus, it was generally easy when all the circumstances of the case were taken into account. He deprecated a hesitating footing, which often meant that a diagnosis was not arrived at till the case had become too far advanced for operation. Mr. Doran had compared cancer of the breast with cancer of the uterus. Dr. Lewers believed that, so far as cancer of the *body* of the uterus was concerned, at all events, the disease remained for a longer time strictly circumscribed, and therefore more amenable to treatment than in cases of cancer of the breast. Reference had been made to vaginal hysterectomies for cancer by other operators, but he believed that in most of the cases cited the operation had been undertaken for cancer of the cervix, and therefore such cases were in a different class altogether from those mentioned in his (Dr. Lewers's) paper, which dealt with hysterectomies for cancer of the body of the uterus. Dr. Horrocks had referred to a case where the uterus was too large to remove *per vaginam*, and where, therefore, the combined abdominal and vaginal operation

had been employed. On this point Dr. Lewers believed that, speaking generally, by the time the uterus had become so large that it could not be removed *per vaginam* the disease had involved tissues external to the uterus, and that therefore, as the chance of cure was almost *nil*, the operation was not worth undertaking. His classification of cases into those of hard and soft cancer had been criticised; it was not meant as a pathological classification, but merely as one that was certainly useful clinically; the hard form was much the rarer, and might easily be overlooked unless its existence was remembered, and the fact that in such cases nothing could be removed with the finger or curette borne in mind. As regards the details of the operation, here, again, Dr. Lewers dwelt on the importance of distinguishing cases of hysterectomy for cancer of the cervix from those of cancer of the body. In the former class the operation might often, as had been said by some of the speakers, present no great difficulty; but it was far otherwise in hysterectomy for cancer of the body. The patient was frequently old, and there was, therefore, senile narrowing of the vagina, and she was often also nulliparous. The body of the uterus was considerably enlarged. On the other hand, in hysterectomy for cancer of the cervix the body of the uterus was generally small, and the vagina usually capacious. Dr. Lewers had not generally removed the uterine appendages in performing hysterectomy for cancer, and had not traced any after trouble to having so left them. He thought that it was best to trust to pressure forceps for securing the broad ligaments, and that it was dangerous to remove them too soon, not only for fear of hæmorrhage, but owing to the risk of breaking down the delicate adhesions in the neighbourhood of the wound. Dr. Lewers thanked the Society for the attention it had given to his paper.

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